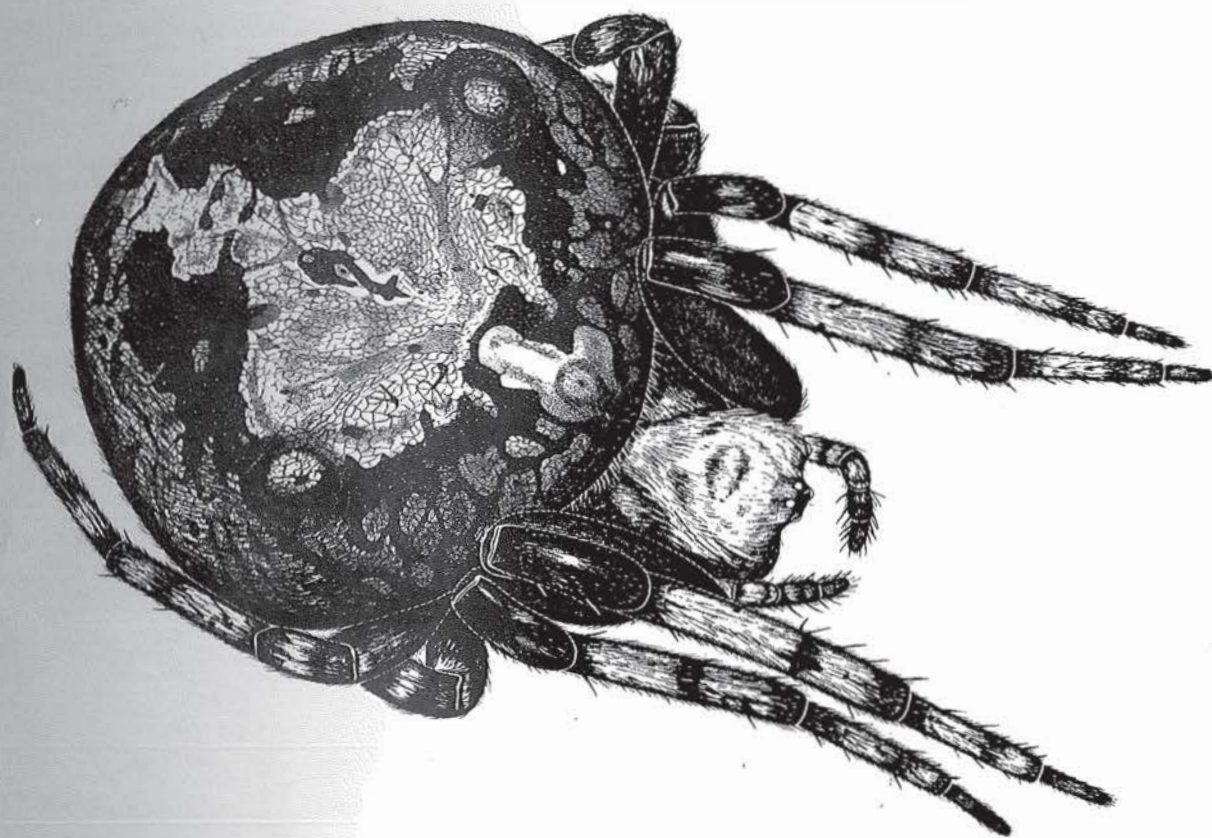


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# THE SPIDERS OF NEW ZEALAND

## PART VI



by

R. R. FORSTER  
A. F. MILLIDGE  
D. J. COURT

# **The Spiders of New Zealand**

Part VI

## **FAMILY CYATHOLIPIDAE**

by R. R. Forster

## **FAMILY LINYPHIIDAE**

by A. F. Millidge

## **FAMILY ARANEIDAE**

by D. J. Court

R. R. Forster

**Otago Museum Bulletin No. 6**

**Dunedin, March 1988**

Family **LINYPHIIDAE**  
by **A.F. Millidge**

**INTRODUCTION**

A general description of the family Linyphiidae was presented by Blest in Part V, and in the same article a detailed account was given of the subfamily Mynogleninae. The remaining New Zealand members of the family are dealt with here. There is as yet no general consensus amongst arachnologists on the division of the Linyphiidae into subfamilies. Merrett (1963:Proc. Zool.Soc.Lond.140:347) summarised the earlier taxonomic work on the family, and suggested a partial classification based on palpal structures. Blest (1976:J.Zool.Lond.180:185) proposed that the family should be split into the two traditional subfamilies Linyphiinae and Erigoninae on the basis of the tracheal structures; later (Blest 1979:Part V) he established an additional subfamily, the Mynogleninae. The present author (Millidge 1984:Bull.Br.arachnol.Soc. 6(6):229) has suggested an elaboration of Blest's basic classification, in which the Mynogleninae and the Erigoninae are retained in the forms defined by Blest, while the somewhat amorphous Linyphiinae (*sensu* Blest 1979) are subdivided, on the basis of epigynal structures, into three subfamilies, the Linyphiinae (*s.str.*), the Micronetinae and the Drapetiscinae, plus a group of genera which appear to have primitive epigynal characters and which do not on present knowledge fit into any one of the defined subfamilies. This latter group of genera (the "*Stemonyphantes* group") do not merit subfamily status. This taxonomic scheme thus comprises 5 defined subfamilies and the *Stemonyphantes* group. In the same paper (Millidge 1984), those species which have a simple tracheal system confined to the abdomen ("*linyphiine*" form of Blest 1976) are labelled "haplotracheate," while those which have the more complex tracheal system which invades the cephalothorax are labelled "desmitracheate"; only the Erigoninae are desmitracheate.

Excluding the Mynogleninae, some 37 members of the Linyphiidae have been taken in New Zealand; of these, 29 are thought to be part of the native fauna, while 8 are considered to be introductions. It is suspected (Part I) that there are no native erigonines in New Zealand.

The native linyphiids are members of the genera *Laetesia* Simon, *Novalaetesia* n.gen., *Dunedinia* n.gen., *Laperousea* Dalmás, *Diploplecta* n.gen., *Maorineta* n.gen. and *Ostearius* Hull. The first five of these genera are members of the subfamily Linyphiinae (*s.str.*), *Maorineta* is a member of the Micronetinae and *Ostearius* falls in the *Stemonyphantes* group.

The inclusion of *Ostearius* amongst the native species must be regarded as provisional. The

frequent occurrence of *Ostearius melanopygius* (O.P.-Cambridge) in South America, as well as in New Zealand, and the fact that its genitalia are similar to those of some South American linyphiids (Millidge, paper in preparation), but quite different from those of any European haplotracheate species, suggests that *Ostearius* may be part of the relict fauna of Gondwanaland. The bright colour of the abdomen is quite uncharacteristic of a European species, but is not unknown in linyphiids from south and central America. This hypothesis would require that the presence of *Ostearius* in Europe, North America and some other areas (summarised by van Helsdingen 1972: Zool.Medec.47:389) must be the result of comparatively recent dispersal.

The introduced linyphiid species are members of the genus *Lepthyphantes* Menge (subfamily Micronetinae) and of the erigonine genera *Diplocephalus* Bertkau, *Araeoncus* Simon, *Microctenonyx* Dahl (previously *Aulacocyba* Simon), *Lessertia* Smith, *Erigone* Audouin and *Eperigone* Crosby and Bishop. The European species *Lepthyphantes tenuis*, *Diplocephalus cristatus*, *Araeoncus humilis* and *Microctenonyx subitaneus* were almost certainly introduced by early European (mainly British) settlers probably in animal fodder and bedding, and in packaging material (particularly straw). The European *Lessertia dentichelis* may have arrived in ships' ballast dug out from sandhills, which is one of its habitats in the U.K. It is probable that the two *Erigone* species present in New Zealand are less recent introductions. *E.prominens* is known from Japan, Taiwan, Angola, St.Helena and Australia (taken by the author), and may have reached New Zealand by island hopping, or possibly could have arrived with early Maori settlers. *E.wiltoni* has not so far been found outside New Zealand, and how it arrived and from where is not known. *Eperigone fradeorum* has a curious distribution; though first described from the Azores, it is probably a native of the eastern U.S.A., and has since been discovered in South Africa. Its presence in New Zealand must be the result of introduction, but how this occurred is unknown. Two species of *Eperigone* have been reported from the Hawaiian Islands (Suman 1964: Pacific Insects 6(4):670), but whether one of these is *E.fradeorum* is not known.

All figures of the palps are of the right palp, unless stated to the contrary.

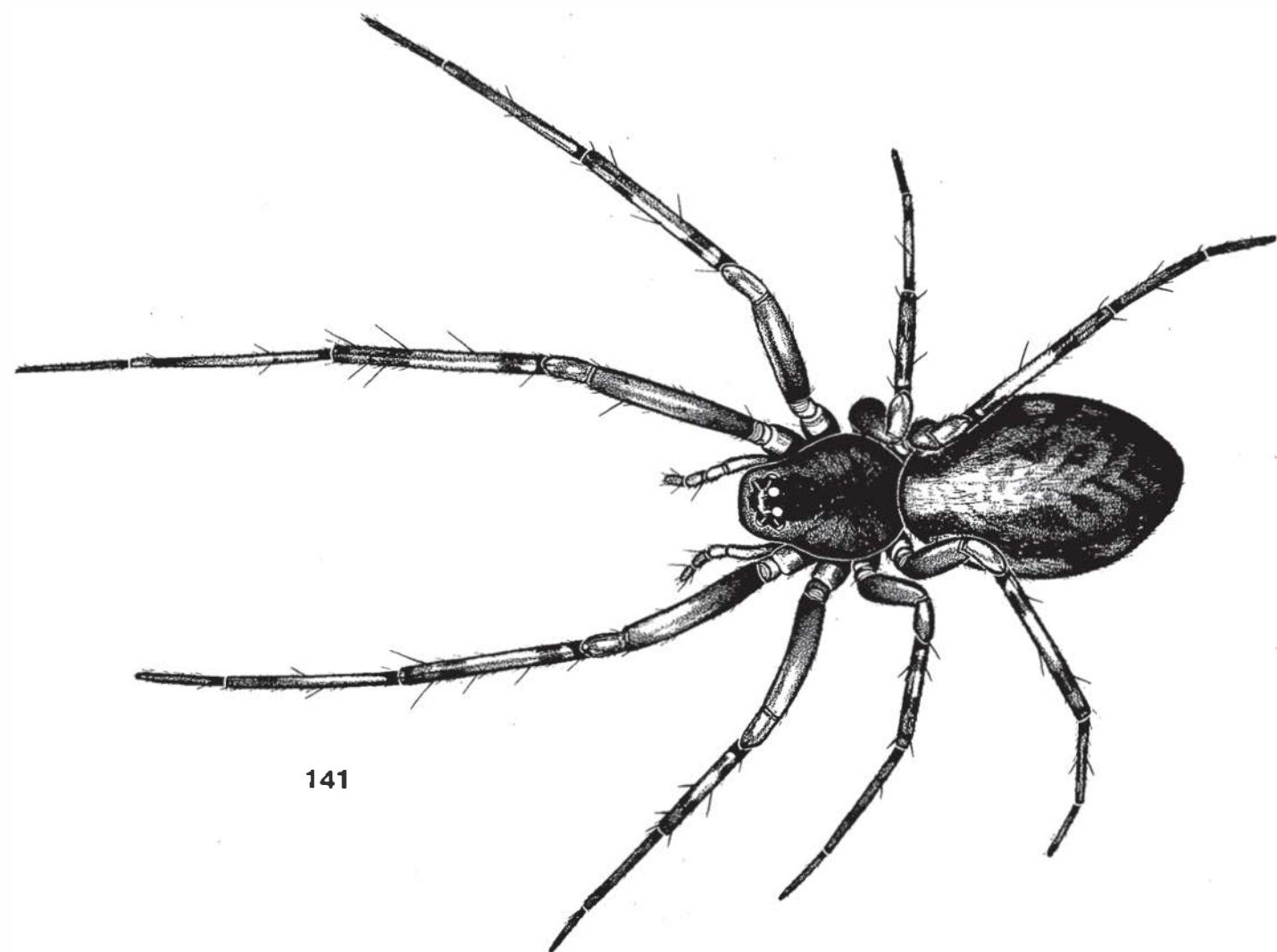
***Laetesia* Simon.**

*Laetesia* Simon 1908. Fauna S.W. Australia 1(12):418; van Helsdingen 1972. Zool.Medec.47:377.

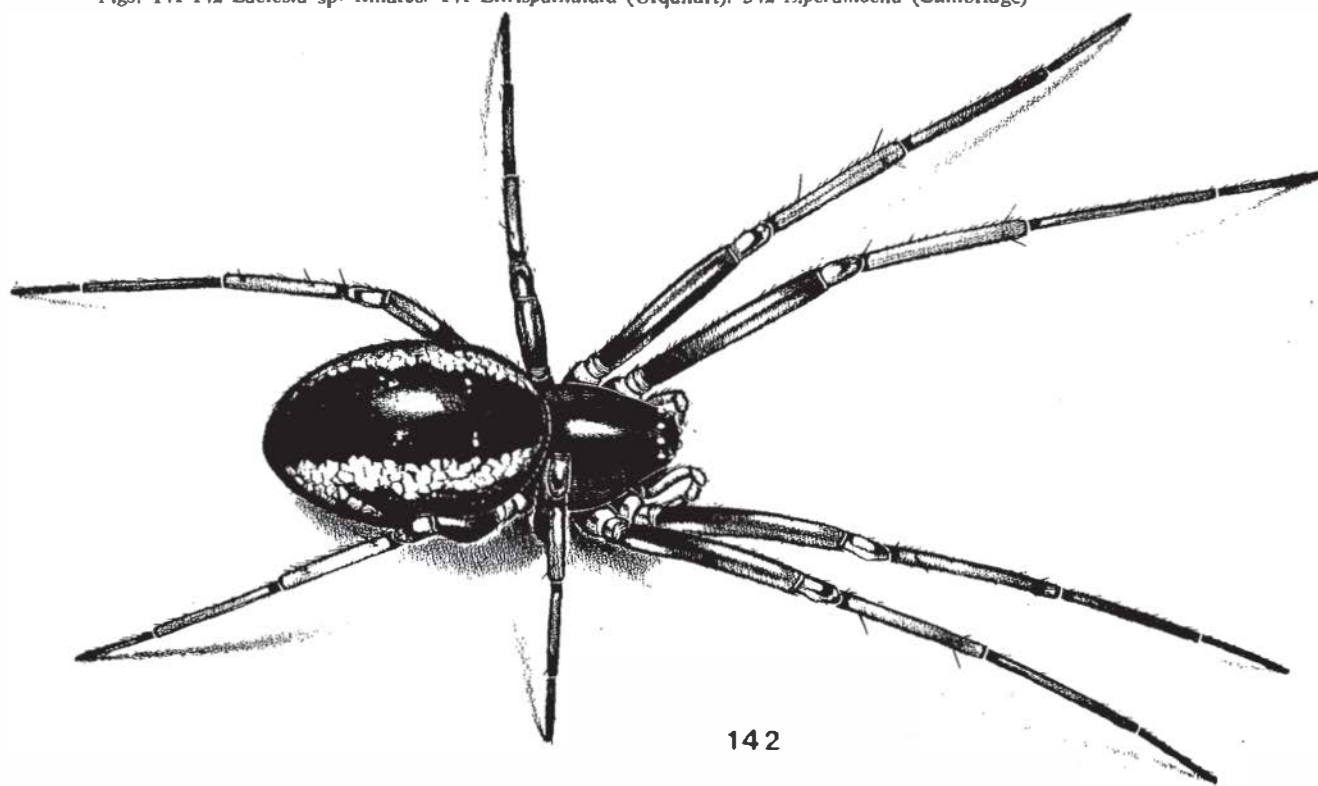
Type species: *Laetesia mollita* Simon

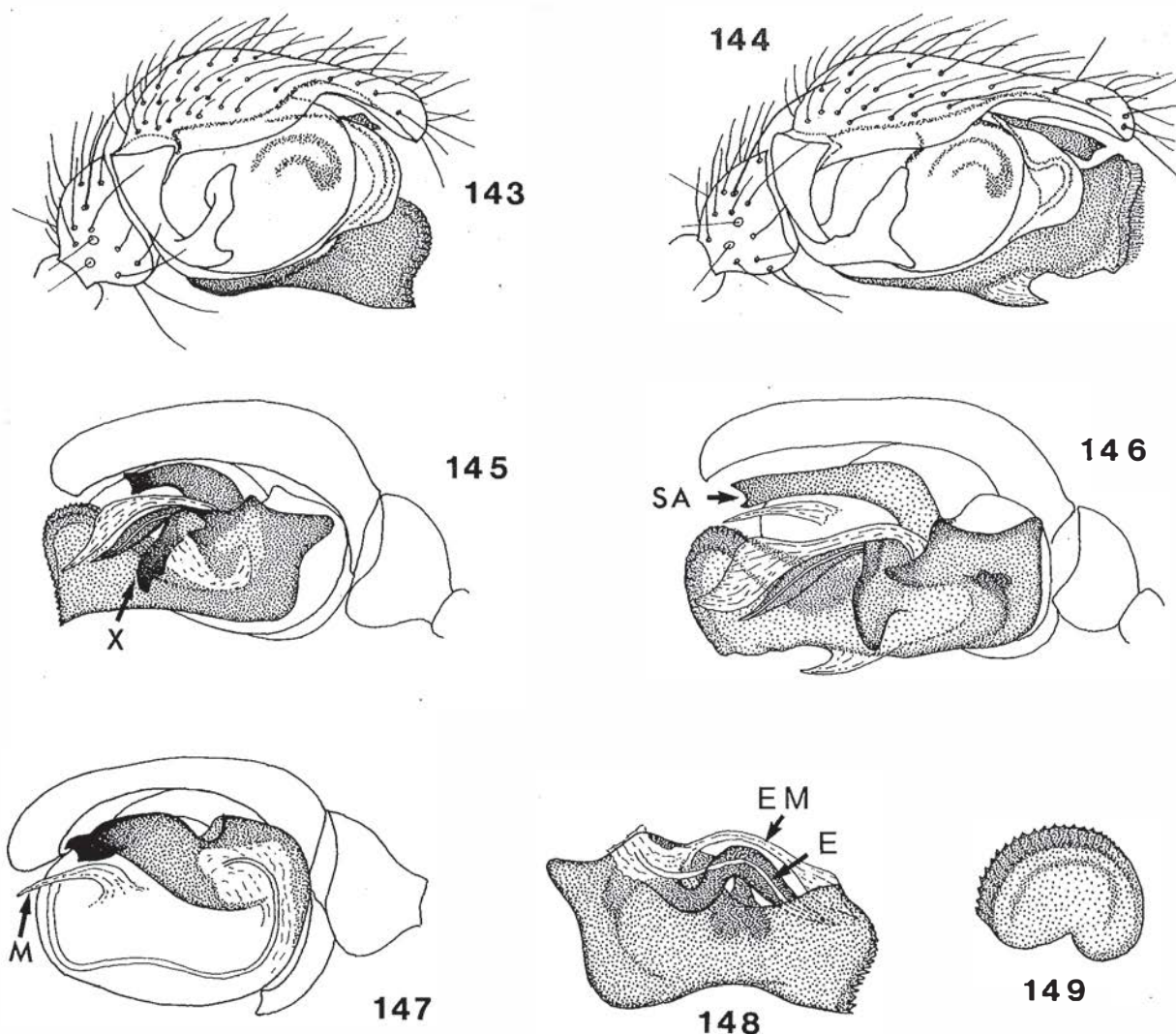
This genus comprises small spiders of total length 1.6-3.3 mm. the carapace is unmodified in both sexes; some long, forward-directed spines are often present along the median line, and the male clypeus carries numerous fine bristles. The abdomen usually has black and white markings, but the





Figs. 141-142 *Laetesia* sp. females. 141 *L. trispathulata* (Urquhart). 342 *L. peramoena* (Cambridge)





Figs. 143-149 Palps, *Laetesia trispathulata* (Urquhart). 143 Ectal. 145 Mesal. 147 Mesal, ED removed. 148 ED lateral. 149 Anterior margin of ED. *Laetesia aucklandensis* (Forster). 144 Ectal. 146 Mesal.

pattern of these markings is very variable. The chelicerae have a weak file laterally in both sexes. The male chelicerae are often elongate (e.g. Fig. 166), sometimes have a row of denticles anteriorly (Fig. 165), and sometimes are "dictyniform" (Fig. 168). The legs carry numerous fairly long spines, as follows: femora I and usually II, and occasionally III and IV, have one dorsal spine, and sometimes there is one prolateral spine on femur I. The patellae all have one dorsal spine. The tibiae have 2 dorsal spines on all legs, with one or more prolateral and retrolateral, and occasionally one or more ventrals the laterals are sometimes absent on III and IV. The metatarsi have one dorsal spine on I and II, and sometimes also on III and IV; the anterior metatarsi may also have one ventral spine. Metatarsi I-III have a dorsal trichobothrium, with Tml 0.15-0.30. The female palp has a tarsal claw (exception, *D. minor*). The members of the genus are haplotracheate.

The ventral plate of the epigynum is strongly convex (e.g. Figs. 177, 185), and is drawn out posteriorly on either side into 2 arms (e.g. Fig. 173). The dorsal plate of the epigynum is extended posteriorly to give a scape of variable length (Fig. 173); this scape carries a socket distally on the ventral side. There is a well-defined atrium between the ventral and dorsal

plates. The genital openings lie in pits located on the ventral surfaces of the 2 arms of the ventral plate. Internally, the ducts follow a relatively simple pathway from the openings to the spermathecae (Fig. 187) the duct arrangement is very similar to that in the genera *Kaestneria* Wiehle and *Laperousea* Dalmas, and as in these genera the spermathecae have a small tubular subsidiary chamber. The paracymbium of the male palp has the basal arm fairly constant in form, but the distal arm differs slightly from species to species. The palpal organ has the suprategulum and the stalk which carries the duct to the embolic division near to the posterior. The suprategular apophysis (SA, Fig. 146) is long and notched distally; the length of this apophysis can be somewhat variable within a species. The tegulum has a pointed membranous apophysis anteriorly (M, Fig. 147), which appears to be different in each species but is difficult to see. The embolic division comprises a broad plate, often translucent, with a more or less semicircular serrated margin anteriorly (Figs. 145, 149); the stout, pointed embolus (E, Fig. 148) arises from the lateral (inner) side of the plate, from near the stalk. A long, membranous apophysis (the embolic membrane: EM, Fig. 148) originates from the same region. The plate also carries a sclerotised apophysis (X, Fig. 145) on the mesal side.



*Laetesia* comprises 10 species in New Zealand, plus several others in Australia and the neighbouring Pacific Islands (van Helsdingen 1972). The males can be diagnosed fairly readily in most cases by the palpal organ; the females are diagnosed by the epigynum, but diagnosis may be uncertain for a few species which have closely similar epigyna.

*Laetesia* forms part of the Linyphiinae (s. str.: Millidge 1984). The epigynum is similar to that of *Kaestneria*, while the palpal organ is generally similar to that of *Kaestneria* and very close indeed to that of the European genus *Cresmatoneta* Simon 1929. Consideration of the palpal structure alone would indicate that *Cresmatoneta* is a synonym of *Laetesia*, but the differing epigynal forms in these two genera probably preclude this synonymy.

### *Laetesia trispathulata* (Urquhart)

Figs. 141, 143, 145, 147-148, 169, 170, 187

*Linyphia trispathulata* Urquhart 1885. Trans. New Zealand Inst. 18:186

*Laetesia trispathulata*: van Helsdingen 1972. Zool. Meded. 47:387

#### Measurements

Carapace length	female	1.0 - 1.45 mm
	male	1.5 mm
Total length:	female	2.7 - 3.3 mm
	male	3.3 mm

**Description** Carapace: pale brown with a broad brown to black longitudinal stripe. Chelicerae: long and relatively narrow in the male. Abdomen: the pattern is variable dorsally there are dark spots, lines or chevrons on a white ground, the sides are marbled white, and ventrally the colour is brown, grey or black. Sternum: brown with blackish margins, to deep brown suffused with black. Legs: long and slender; yellow in colour, weakly annulated to a variable degree with brown. The spines are standard for the genus, with however a tendency for some of the spines to be lacking in smaller specimens. Tml ca. 0.20. Epigynum: Fig 169, 170, 187. The two lateral projections from the ventral plate are short, and the scape is also relatively short as in all the species, there is some variation both in the length of the scape and in the distance apart of the lateral projections. Palp: Figs. 143, 145, 147, 148, 149; the suprategular apophysis is normally short.

**Note:** there are many specimens of this species in the collection, but all the females have the epigynal form shown in Fig. 169. It is just possible that the species described here is not *L. trispathulata* (epigynum Fig. 170), the paratype males of which have been lost; Urquhart's figures of the male palp of his species are useless for diagnosis.

The female can be diagnosed by the epigynum, which has the scape and the lateral arms shorter than in the remaining species. The male is diagnosed by the palp, particularly by the short suprategular apophysis and the form of the embolic division.

**Type:** Holotype female from Te Karaka, Auckland; in Otago Museum, examined. The paratype males cannot be found.

**Records** North Island. North Auckland. North of Maungaturoto, leaf litter, 9.vii.67, J.A.K. Wise. Kohukohu, ex mangroves, 22.viii.53. B.J. Marples. Mareretu District, Golden Stairs Rd., rimu litter, 9.vii.67, K.A.J. Wise. Opunake Beach, 20.iii.69, R.R.F., C.L.W. Waipu, 8.i.67, R.R.F. Little Barrier Island, litter, 6.ix.59, J. Kikkawa. Wellington. Waikanac, 6.ii.43, R.R.F. Kapiti Island, v.47. R.R.F. Tuna Saddle, near Taumaranui, 10.i.67, R.R.F. Totara Reserve, Pohangina, 20.i.67, R.R.F. Apiti, 29.xii.66, R.R.F. Kitchener Park, Feilding, 29.xii.66, R.R.F. Vinegar Hill, Reserve, near Hunterville, 6.i.67, R.R.F. Wairarapa, Lirua, 22.ii.67, C.L.W. South Island. Stephens Island, 29.xi.53, B.A. Holloway. Marlborough. Kaikoura, grass and marram, 19.v.75, A.D. Blest. Mount Fyffe, under stones, A.D. Blest. Nelson. Pupu Springs, Takaka, 13.viii.66, C.L.W. Canterbury. Kelseys Bush, Waimate, 19.x.67, C.L.W. Lewis Pass, pitfall, 10-13.xii.71, C.L.W. Lake Taylor, 14.v.52, R.R.F. Otago. Deep Dell, pitfall, 25.x.67, C.L.W. Kokonga School, pitfall, 27.i.68, C.L.W. Near Mt. Swinburn, pitfall, 16.ii.69, C.L.W. North of Tiroti, pitfall, 4.xi.67, C.L.W. Wedderburn, pitfall, 12.xii.68, C.L.W. East Branch, Eweburn, ii.vi.68, C.L.W. Taieri Bridge, Maniototo, pitfall, 4.x.67, C.L.W. Cardrona Valley, 21.xii.69 C.L.W. Millers Flat 500m, pitfall, xii.79, B. Barratt. Kokonga, pitfall, 6.iii.69, C.L.W. Naseby, mid Kyeburn Rd., pitfall, 20.xi.68, C.L.W. Waitahuna Bridge, 2.i.70, C.L.W. Outram, beating, 30.xi.69, C.L.W. River flat near Middlemarch, 12.iv.71, C.L.W. Mt. Misery Rd., Waianakarua, 24.iv.71. C.L.W. Rocklands, 800m, pitfall, 10-24.x.78, B. Barratt. Nenthorn, 23.iv.67, C.L.W. Flagstaff, pitfall, 29.xi.70, C.L.W. Frasers Gully, Dunedin, 17.v.69, C.L.W. Old Man Range, 1372m, litter, 15.v.75, J.C. Watt. Southland. Pahia ii.49, Bluff, 10.iii.70, C.L.W. Fiordland. Monkey Flat, Eglington Valley, from foliage, 27.xii.43, J.T. Salmon. Stewart Island. 3.i.56, I. Mannering.

### *Laetesia aucklandensis* Forster

Figs. 144, 146, 161, 163, 171

*Linyphia aucklandensis* Forster 1964. Pacific Ins. Monogr. 7:98; van Helsdingen 1972. Zool. Meded. 47:386.

#### Measurements

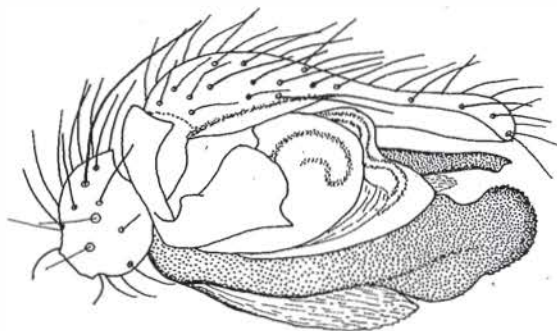
Carapace length:	female	1.3 - 1.55 mm
	male	1.4 - 1.55 mm
Total length:	female	2.9 - 3.1 mm
	male	2.65 - 2.8 mm

**Description** Carapace: orange-brown, with faint grey striae. Chelicerae: fairly long in the male (Figs. 161, 163). Abdomen: dorsally white, sometimes with a few irregular black markings; the sides and ventral surface are black, with some white markings on the sides. Sternum: yellow-brown, suffused with black on the margins. Legs: pale yellow to brown, weakly annulated; the trochanters and coxae are paler in colour than the other segments. The spines are standard for the genus. Tml: 0.20-0.23. Epigynum: Fig. 171 very similar to that of *L. peramoena* (Fig. 172), but the scape is rather more slender. Palp: Figs. 144, 146; the palpal organs are somewhat elongated.

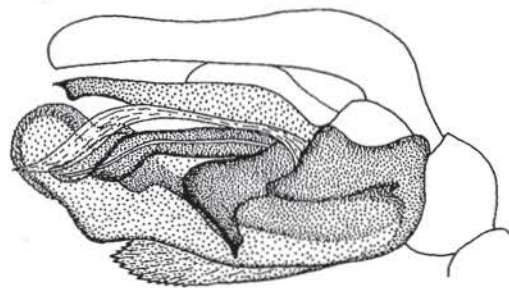
The female is diagnosed by the epigynum (which is very similar to that of *L. peramoena*, coupled with the geographic distribution. The male is diagnosed by the palp; this is close to that of *L. bellissima*, but the 2 species differ in the form of the projection on the base of the embolic division. *L. amoena* has a projection somewhat similar to that of *L. aucklandensis*, but this species is smaller in size, with the palpal organs less elongated, and the chelicerae are different (Fig. 162, 164 cf. Figs. 161, 163).

**Types:** Holotype female and "allotype" male from Auckland Islands; in National Museum, Wellington; examined.

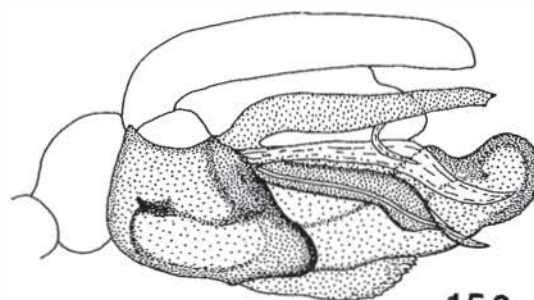
**Records** Auckland Island. Deas Head under rata logs 18.i.63, P.M. Johns. Camp Cove, 1-20.ii.73, J.S. Dugdale. Beating *Metrosideros* forest, 28.xii.72, J. Farrell. Ranui Cove, heating ferns, i.63, P.M. Johns, 25.i.66, R.G. Ordish. Port Ross, 28.i.66, R.G. Ordish. Under log, 27.viii.47, J.H. Sorensen.



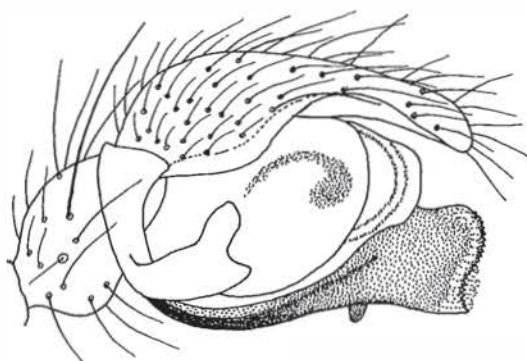
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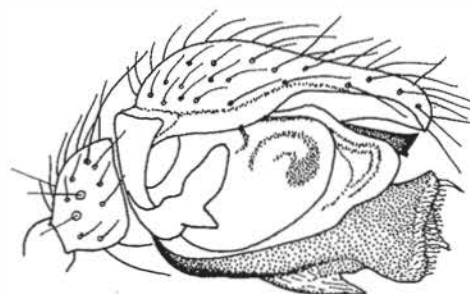
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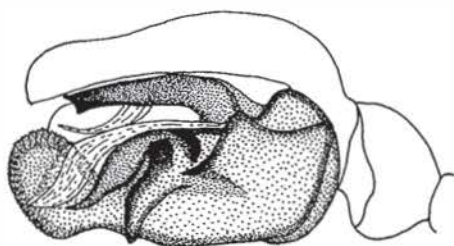
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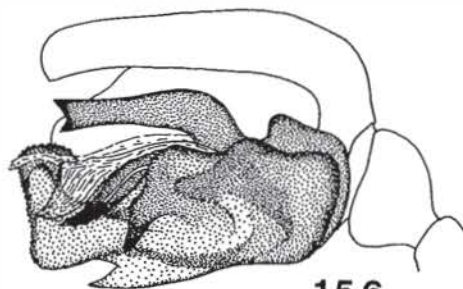
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156

Figs. 150-156 Palps. *Laetesia bellissima* n.sp. 150 Ectal. 151 Mesal. 152 Antipodes Island specimen, left palp mesal. *Laetesia peramoena* (Cambridge). 153 Ectal. 155 Mesal. *Laetesia amoena* n.sp. 154 Ectal. 156 Mesal.

*Laetesia bellissima* n.sp.

Figs. 150, 151, 152, 156, 175

Measurements

Carapace length:	female	1.05 - 1.2 mm
	male	1.2 - 1.25 mm
Total length:	female	2.65 - 3.0 mm
	male	2.7 - 2.9 mm

North Harbour, in *Poa foliosa*, 12.i.73, J.Farrell. Enderby, ex *Poa litorosa* under shag nests, 26.ii.73, J.S.Dugdale. French Island ex *Poa*, 1.i.63, J.L. Gressitt. Rose Island, ex *Poa litorosa*, 14.xii.72, J.Farrell. Duck Island, Deas Head, under rata logs, 18.i.63, P.M.Johns. Ocean Island, on *Stilbocarpa* 29.iii.62, K.A.J.Wise (allotype).



**Description** Both sexes were taken together. Carapace: blackish brown, with a broad median white or pale yellow stripe. Chelicerae: furnished in the male with an anterior row of denticles (Fig. 165), each with a tiny hair. Abdomen: dorsally white, with some blackish markings or chevrons, especially posteriorly; the sides are black, and the ventral surface is white, sometimes suffused with black. The area around the spinners is black. Sternum: yellow, suffused with black on the margins. Legs: pale yellow to brown, with dark annulations, particularly on the tibiae and metatarsi. The spines are standard for the genus, but with the metatarsi usually lacking ventral spines. Tml ca. 0.15. Epigynum: Fig. 175. Palp: Figs. 150, 151, 152; the palpal organs are somewhat elongated.

The female is diagnosed readily by the epigynum, which has the lateral arms and the scape long and narrow. The male is diagnosed by the palp, which is rather similar to that of *L. aucklandensis* (q.v.); the chelicerae are different in these 2 species (Fig. 165 cf. Fig. 161).

**Type.** Holotype male and paratype female from South Island near Olamore Park, Gore, ex tussock, 15.ix.79 (R.R. Forster); deposited in Otago Museum, Dunedin.

**Records** These records rank as paratypes. South Island. Otago. Leith Saddle, grass and manuka litter, 7.xii.74, R.R.F. 5 miles east of Lawrence 10.x.66, C.L.W. Lake Tuakitoka, near Kaitangata, on Niggerhead, 14.ix.67, R.R.F. Nelson. Pretty Bridge Valley, 2.ii.66, G.Hitchings. Canterbury. Waipara Gorge, 1.v.49) R.R.F.

### *Laetesia peramoena* (O.P.-Cambridge)

Figs. 142, 153, 155, 166, 167, 172, 173

*Linyphia peramoena* O.P.-Cambridge 1879. Proc.Zool.-Soc.Lond. 1879:694:

*Bathypantes peramoenus*: Roewer 1942. Katalog, der Araneae 1:572; Bonnet 1955:867.

*Laetesia peramoena*: van Helsdingen 1972. Zool.-Meded.47:387.

#### Measurements

Carapace length:	female	1.35 - 1.45 mm
	male	1.35 - 1.45 mm
Total length:	female	2.8 - 3.0 mm
	male	3.0 - 3.2 mm

**Description** Carapace: orange, with sometimes a median dark stripe. Chelicerae: fairly long in the female; long to very long in the male, strongly inclined posteriorly, with a small boss basally (Fig. 166, 167). Abdomen: grey, with same white blotches; the pattern is extremely variable. Sternum: yellow to orange. Legs: yellow to pale brown in colour, with sometimes a single dark annulation on the tibiae. Spines typical of the genus. Tml 0.15-0.18. Epigynum: Figs. 172, 173 the margin of the ventral plate between the lateral extensions is usually rounded, rather than angular. Palp: Figs. 153, 155.

The female is diagnosed by the epigynum, which is however close to that of *L. aucklandensis* (q.v.). The male is diagnosed by the palp and by the chelicerae.

**Type:** Male lectotype, with one male and one female paratypes, from Wellington, New Zealand; in the Hope Department, University Museum, Oxford, examined.

**Records** North Island. Mount Egmont, 3505 ft., 22.ii.46, R.R.F. South Island. Nelson. Flora Hut, from foliage, 28.i.48, R.R.F. Canaan, 3.ii.69, C.L.W. Canterbury. Lewis Pass, 25.iv.77, R.R.F. Fiordland. Homer Tunnel, from foliage, 17.xii.46, R.R.F. Thompson Sound, sealevel, under logs, 14.i.48, R.R.F. Beating undergrowth, 16.i.68, E.G.Turbott. Simonim Pass, West Olivine Range, from *Chionochoa* flower, 1036m, 23.i.75, J.S.Dugdale. Chatham Islands. Kaiangaroa, 28.i.54, R.R.F.

### *Laetesia amoena* n.sp.

Figs. 154, 156, 162, 164, 174

**Measurements.** Carapace length: female 0.95-1.0 mm, male 1.1-1.2 mm Total length: female 1.9-2.1 mm, male 2.3-2.5 mm

**Description** Both sexes have been taken in the same locality, but not together; in size and other characters the two sexes appear to be matched, and are here assumed to be the same species. Carapace: deep brown, with a paler patch on the fovea. Chelicerae: long in the male, with a denticle basally (Figs. 162, 164). Abdomen: dorsally mottled black, with irregular paler chevrons; the sides are black, and ventrally the colour is pale brown or yellow. Sternum: brown, with blackish margins. Legs: brown to pale brown, weakly annulated. The spines are standard for the genus, but lateral spines are absent on tibiae III and IV, and there are no ventral spines on the metatarsi. Tml 0.20-0.23. Epigynum: Fig. 174. Palp: Figs. 154, 156.

The female is diagnosed by the epigynum, which is however rather similar to that of *L. aucklandensis* and *L. peramoena*. The geographical distribution will distinguish from *L. aucklandensis*, and the smaller size will probably distinguish *L. amoena* from both *L. peramoena* and *L. aucklandensis*. The male is diagnosed by the palp, which is similar to, but less elongated than, those of *L. aucklandensis* and *L. bellissima*; the chelicerae of *L. amoena* differ from those of these two species.

**Type.** Holotype male, with two paratype males, Southland. Waiaka Forest, Piano Flat, in leaf litter, 12.ix.78 (R.R. Forster); deposited in Otago Museum, Dunedin.

**Records** All these records rank as paratypes.

North Island. North Auckland. Mimiwhangata, 16.xii.70, J.Darby. Wellington. Desert Road, leaf litter, 23.iii.48, J.T.Salmon. South Island. Nelson. St.Arnaud Track, Rotoiti, 610-650m, window trap in *Nothofagus* forest, 24-26.iii.80, Newton, Thayer. Canterbury. Kennedys Bush, Christchurch, leaf litter, 4.iii.43, J.T.Salmon. Cass, leaf litter, 10.vii.49, R.R.F. Otago. Akatore Creek, 14.iv.66, C.L.W. Leith Saddle. pitfall, 25.i.67, R.R.F. Opoho Bush, 10.xii.70, C.L.W. Kidds Bush, Hawca, litter, 28.i.73, J.C.Watt. Fiordland. Lake Gunn, 29.xii.48, J.T.Salmon. Lake Te Anau, ex moss, 12-24.xii.53, R.R.F. Cascade Creek, 31.iii.72, C.L.W.

### *Laetesia minor* n.sp.

Figs. 157, 158, 168, 180, 181, 188

**Measurements.** Carapace length: female 0.75-0.80 mm, male 0.9-1.0 mm Total length: female 1.8-2.0 mm, male 2.0-2.1 mm.

**Description** Both sexes have been taken together. Carapace: pale yellow to pale brown suffused with some grey. Chelicerae: in the male dictyniform (Fig. 168). Abdomen: grey to black, with sometimes irregular white blotches or chevrons dorsally, and occasionally some white blotches on the sides. Sternum: yellow, suffused with black. Legs: relatively short and stout. Pale yellow to yellow in colour, with the tibiae weakly annulated. The spines are typical of the genus. Tml ca. 0.20. Epigynum: Figs. 180, 181, 188. Palp: Figs. 157, 158.

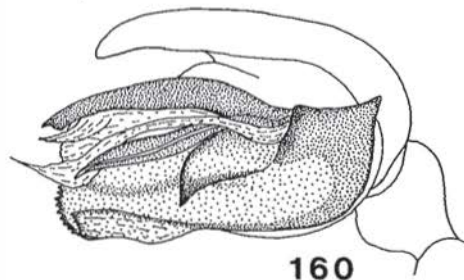
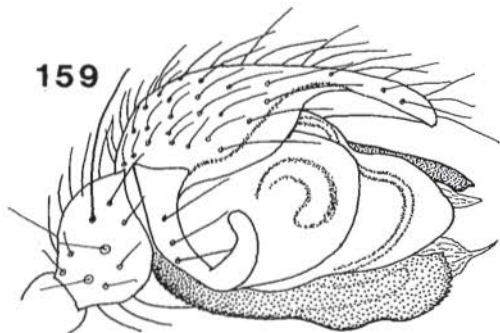
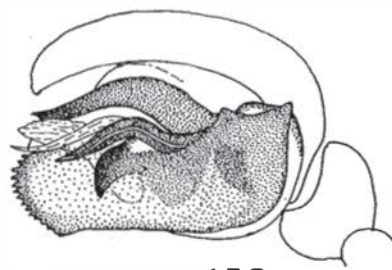
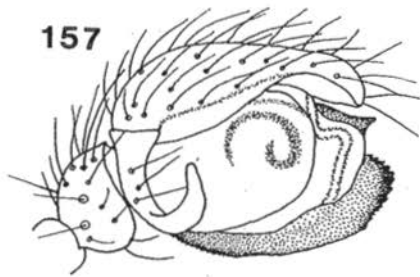
The female is diagnosed by the epigynum, which is significantly smaller and darker in colour than in the other species, apart from *L. distincta*; this latter species has the epigynum of similar shape, but the internal duct system (the outlines of which can be seen through the integument) are different. The male is diagnosed by the palp, and by the dictyniform chelicerae.

**Type.** Holotype male, and paratype female, from Kaikoura, in pine detritus, 20.v.74, (A.D.Bleste); deposited in the Otago Museum, Dunedin.

**Records** All these records rank as paratypes.

North Island. Auckland. Pukekohe, pitfall in pasture, 4.x.77, N.A.Martin. White Island, 6.xii.66, K.A.J.Wise. Stanley Island, Mercury Islands, 24.xi.72, G.W.Ramsay. South Island. Stephens Island, summit, in tussock, 15-20.xii.54, G.W.Ramsay. Nelson. Mount Arthur, 4,500 ft., moss in tussock, 20.v.66, I.Townsend. Lake Sylvester, 4330 ft., litter,





Figs. 157-160 Palps. *Laetesia minor* n.sp. 157 Ectal. 158 Mesal. *Laetesia germana* n.sp. 159 Ectal. 160 Mesal.

31.iii.69, J.S.Dugdale. Marlborough. Stanton Pass, Molesworth, litter, 17.viii.66, A.K.Walker. Fell Peak, Richmond Range, litter, 13.iii.69, A.C.Eyles, Kaikoura, pine litter, 18-20.v.74, A.D.Blest. Canterbury. South Brighton, pine litter, 13.vi.74, A.D.Blest. Weka Pass, 12.i.47, B.J.Marples. Otago. Bushy Glen, west Wanaka, 21.xii.48, J.T.Salmon. Millers Flat, 500m, pitfall in tussock, viii.78, B.Barratt. Middlemarch, east of river, 10.iv.71, T.R.Beatson. Lindis Pass, 762m, litter, 11.i.71, J.S.Dugdale. Summit Taieri Ridge, pitfall, 14.iv.67, C.L.W. Rocklands, 800m pitfall in tussock, 10-24.x.78, B.Barratt. Morrisons, Pigroot, in niggerheads, 13.ix.66, C.L.W. Waipori, 520m, pitfall in burnt tussock, 24.x.-7.xi.78, B.Barratt, Old Man Range, 1432m, litter, 24.ii.74, J.C.Watt. Allans Beach, 2.i.52, B.J.Marples. Fiordland. Eglinton Flat, 16.ii.66, R.R.F.

#### *Laetesia distincta* n.sp.

Figs. 182, 189

**Measurements** Carapace length: female 0.75-0.80 mm. Total length: female 1.55-1.65 mm

**Description** Only the female is known. Carapace: pale yellow, with faint grey margins. Abdomen: black dorsally, with white spots and/or chevrons; ventrally blackish. Sternum: yellow, suffused with grey. Legs: pale yellow to almost white. Spines typical of the genus. Tml ca. 0.25. Epigynum: Figs. 182, 189.

The female is diagnosed by the epigynum, which is similar in external form to that of *L.minor*; the internal duct arrangement is however different (Fig. 189 cf. Fig.188).

**Type.** Holotype female from Huierau Ra., Heipipi, Auckland, North Island, litter 17.i.72 (G.W.Ramsay). Deposited in Entomology Division, DSIR, Auckland.

**Records** Paratype female. North Island. Mamaku Ranges, Rotorua, litter, 18.i.72, (G.W.Ramsay).

#### *Laetesia prominens* n.sp.

Figs. 176, 177.

**Measurements.** Carapace length: female 0.70 mm. Total length: female 1.6 mm

**Description** Only the female is known. Carapace: pale yellow in colour, suffused with some grey. Abdomen: dorsally grey with some irregular blackish chevrons and white blotches; ventrally black. Sternum: black. Legs: pale yellow to pale brown. Spines typical II and IV. Tml ea. 0.25. Epigynum; Figs. 176, 177.

The female is diagnosed by the epigynum, which is large and prominent, and quite distinct from that of any other species. **Type.** Holotype female from Puketi State Forest, Auckland, ex litter, 21.i.72 (G.W.Ramsay); deposited in Entomology Division, DSIR, Auckland. **Records** Paratype female. North Island. North Auckland. Kohukohu, the skyline, ex bush, 28.vii.53 (B.J.Marples).

#### *Laetesia germana* n.sp.

Figs. 159, 160, 178

**Measurements** Carapace length: female 1.1-1.25 mm, male 1.25-1.40 mm Total length: female 2.65-2.9 mm, male 2.45-2.65 mm

**Description** The two sexes were taken in the same locality, but not together. Carapace: yellow to orange in colour. Chelicerae: dictyniform in the male, approximately as in Fig.168. Abdomen: in the female, yellowish grey with irregular black markings dorsally; in the male, blackish with white chevrons and blotches dorsally. Sternum: yellow to orange, suffused with grey, and with black margins. Legs: yellow to orange, with sometimes faint darker annulations. Spines typical of the genus. Tml ca. 0.18. Epigynum: Fig.178. Palp: Figs.159,160.

This species is close to the Australian species *L.mollita* Simon, but is probably distinct.

The female is diagnosed by the epigynum, which has a long scape and lateral projections. with the projections slightly divergent. The male is diagnosed by the palpal organ, and by the dictyniform chelicerae.

**Type.** Holotype male. South Island. Canterbury. Lincoln College. ex pitfall (P.A. Campbell), deposited in Otago Museum, Dunedin.

**Records** These records rank as paratypes. South Island. Canterbury. Lincoln College, pitfall. P.A. Campbell (female paratype). Otago. Dunback-McRaes Road, pitfall. 27.i.68, C.L.W. Allans Beach, pitfall in pasture, 9-23.vii.53, B.J. Marples.

#### *Laetesia chathamii* n.sp.

Figs. 179, 185

**Measurements** Carapace length: female 1.3 mm Total length: female 2.8 mm

**Description** Only the female is known. Carapace: orange, heavily mottled with dark brown. Abdomen: dorsally grey,

with black chevrons and white blotches; the sides are black, and the ventral surface is white and grey. Sternum: orange-brown, with irregular black margins. Legs: pale yellow, with dark annulations on the tibiae. The spines are typical of the genus. TmI 0.18. Epigynum: Figs. 179, 185. It is possible that this specimen is a slightly abnormal specimen of *L. peramoena*; the capture of the male is necessary to decide this question.

The female is diagnosed by the epigynum; this is similar to that of *L. peramoena*, but with the lateral projections further apart.

*Type.* Holotype female from Chatham Island, in limestone quarry, ex litter 11.ii.67; deposited in Entomology Division, DSIR, Auckland.

### *Novalaetesia* n.gen.

*Etymology:* from the Latin, *nova*, new, and *Laetesia*.

*Type species.* *Novalaetesia anceps* n.sp.

This genus contains a single small species, of which only the female is known. The somatic characters of the genus are identical with those given for *Laetesia*, and the only discernible difference (in the female sex) lies in the structure of the epigynum (Figs. 183, 184, 186). The lateral projections of the ventral plate are broad, and the genital openings lie in longitudinal depressions on the dorsal surfaces of the projections. The internal duct configuration is simple, and the spermathecae seems to consist only of the narrow, tube-like "subsidiary chamber" (Fig. 184). This epigynum is to some extent intermediate between those of *Laperousea* and *Laetesia*. Whether the placing of this species in a separate genus is justified must await the capture of the male and the determination of its palpal structure. So far as currently known, this genus is endemic to New Zealand.

### *Novalaetesia anceps* n.sp.

Figs. 183, 184, 186.

*Measurements* Carapace length: female 0.75 mm. Total length: female 1.65 mm

*Description* Carapace: yellow-brown, with some dusky markings and blackish margins. Abdomen: dorsally black, with 2 longitudinal rows of white blotches; black on the sides and ventrally. Sternum: orange, suffused with black. Legs: pale yellow-brown; spines as in *Laetesia*, with metatarsi III and IV spineless. TmI 0.25. Epigynum: Figs. 183, 184, 186

The female is readily diagnosed by the epigynum.

*Type.* Holotype female from Mangonui Co., North Island, N.Cape area, in forest remnant, 610 m, in leaf litter in pits on ridge, 22.ii.67 (K.A.J. Wise), deposited in Auckland Museum, Auckland.

### *Dunedinia* n.gen.

*Etymology:* derived from Dunedin, a city in New Zealand; gender feminine.

*Type species:* *Dunedinia denticulata* n.sp.

This genus comprises small spiders of total length 1.6-2.0 mm. The carapace is unmodified. The chelicerae have weak files laterally in both sexes the male chelicerae are distinctly dictyniform in *D. denticulata* (Fig. 200), but less so in *D. decolor* (Fig. 201) and *D. pullata* (Fig. 202). The abdomen is patterned with white, or entirely black. The legs are relatively short and stout. The femora are either spineless or have one weak spine prolaterally. The tibiae have the dorsal spines 2211 in the female; these spines are rather weak, and in the male may be reduced to 1111 or be absent. The tibiae have no lateral spines, and the metatarsi are spineless. Metatarsi I-III have a dorsal trichobothrium, with TmI 0.3-0.45. The female palp is clawless. The species of the genus are haplotracheate.

The epigynum is of the same general form as that of *Laetesia*. The ventral plate is drawn out posteriorly into 2 arms (Fig. 203), which carry the genital openings on their mesal sides, the scape, which carries a socket distally lies between the two arms of the ventral plate. The scape derives from the

ventral plate, but is not a direct posterior extension as in *Laetesia*; the attachment of the scape takes rather the same form as in *Laperousea*. A small atrium lies between the ventral and dorsal plates; this atrium is inconspicuous, being flattened and more or less completely occupied by the basal part of the scape. Internally, the ducts from the openings follow a simple pathway to the spermathecae (Fig. 206), an arrangement which is very similar to that in *Laetesia* or *Laperousea*; as in these genera, the spermathecae have a small tubular subsidiary chamber. The palpal tibia has no apophyses. The paracymbium is simple. The supratégulum lies towards the posterior of the palpal organ, and the supratégular apophysis is broad basally, and slightly hooked distally (SA Fig. 198). The embolic division is a broad plate from the inner (lateral) side of which arise the stout pointed embolus (E) and the embolic membrane (EM Fig. 199).

This genus, though similar to *Laetesia*, shows several points of difference. The leg spines are considerably reduced in comparison with *Laetesia*, and there is no claw on the female palp. The tegulum of the male palp does not have the membranous apophysis anteriorly, and the supratégular apophysis is different in form; the embolic division is of the same general form as in *Laetesia*, but is simpler. The epigynum is similar to that of *Laetesia*, but the attachment of the scape is different, and the atrium is less developed. It is not simply a reduction in size that has brought about these differences, since *Laetesia minor*, which has a typical *Laetesia* epigynum and palp, is not significantly larger than the *Dunedinia* species.

The structures of the epigynum and of the palpal organ show that *Dunedinia* forms part of the *Linyphiinae* (s.str.). The genus comprises 3 species in New Zealand; these species can be diagnosed by the male and female genitalia, and the males are also separable by the cheliceral form. *Laetesia forsteri* Wunderlich (1976: Scnck.biol. 57: 129, from Sydney, Australia, appears to belong in this genus, and an additional species has been taken by the author (A.F.M.) in South Australia, near Adelaide.

### *Dunedinia denticulata* n.sp.

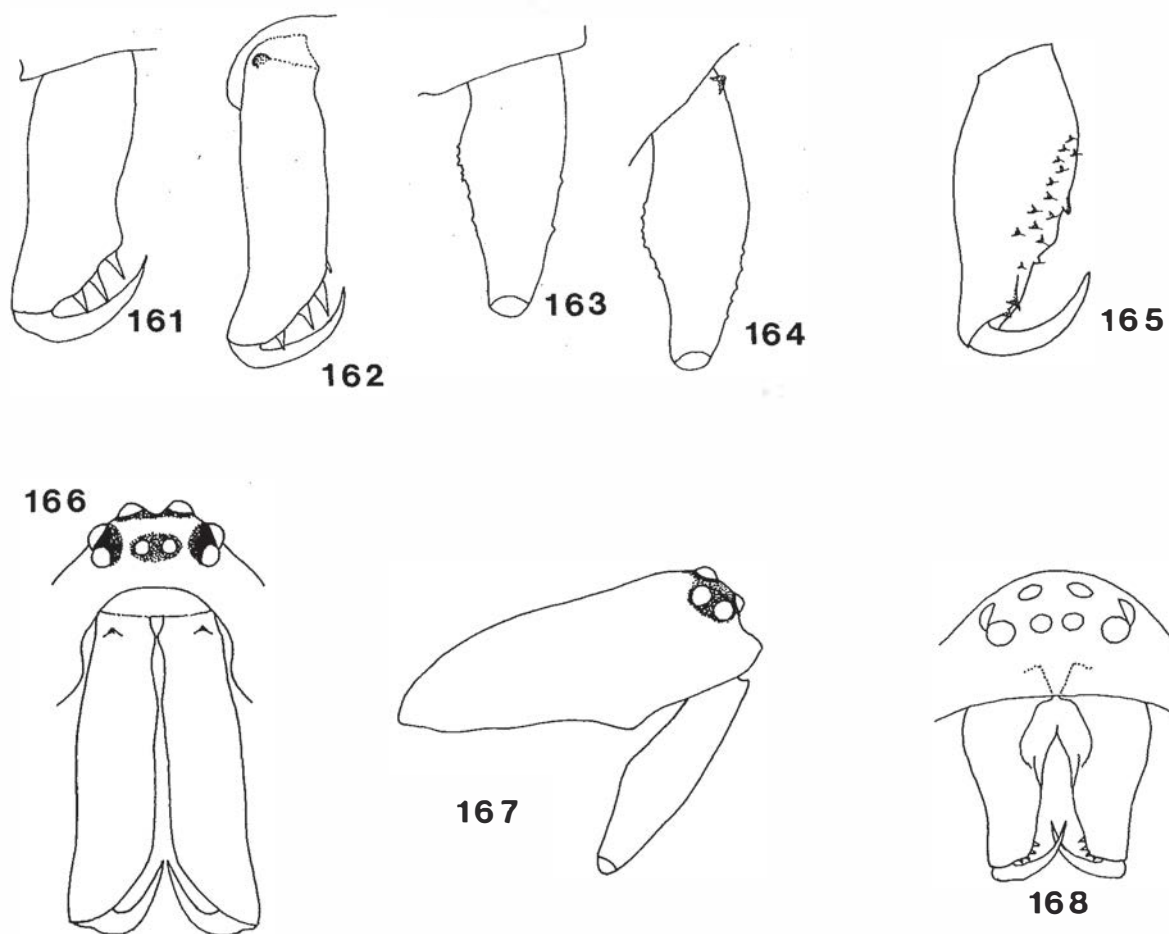
Figs. 190, 191, 192, 200, 203, 206

*Measurements* Carapace length: female 0.80-0.85 mm, male 0.80-0.90 mm total length: female 1.75-1.90 mm, male 1.6-2.0 mm

*Description* Carapace: pale brown to brown, with the fovea and margins darkened. Chelicerae: dictyniform in the male (Fig. 200), with a small denticle anteriorly, near the base. Abdomen: the background colour is grey to black; dorsally there are a few whitish chevrons and spots, and there are white dots on the sides and a large white patch ventrally. Sternum: brown, suffused with black, particularly on the margins. Legs: brown, annulated with broad bands of darker brown. Tibial spines 2211 in the female, 1111 or absent in the male. TmI 0.35-0.40. Epigynum: Figs. 203, 206. Palp: Figs. 190, 191: if the palp is expanded, the embolic division is seen from a different angle, and differs somewhat in appearance (Fig. 192).

The female can be diagnosed by the epigynum; this is easily distinguishable from that of *D. decolor*, but is rather close to that of *D. pullata*. The male is readily diagnosed by the form of the chelicerae, and by the embolic division of the palp. Both sexes are distinguishable from *D. pullata* by the darker colour of the latter species.

*Type.* Holotype male with paratype males and females, from



Figs. 161-168 Male Chelicerae. *Laetesia aucklandensis* (Forster) 161 Anterior. 163 Lateral. *Laetesia amoena* n.sp. 162 Anterior. 164 Lateral. *Laetesia bellissima* n.sp. 165 Anterior. *Laetesia peramoena* (Cambridge). 166 Anterior. 167 Lateral. *Laetesia minor* n.sp. 168 Anterior.

Maori Pa Rd., Nelson, ex moss, 20.viii.65 (J.L.T. and K. Walker); deposited in Entomology Division, DSIR, Auckland.

**Records** All the records rank as paratypes.

Three Kings Islands. Castaway Camp, litter, 16.xi.70, A.J.Healey. Tasman Valley, moss, 14.xi.70, G.Kuschel. North Island. North Auckland. Pandora, West Spirits Bay, manuka litter, 8.iii.67, K.A.J.Wise. Auckland. Alderman Island, litter, 12.xi.72, G.W.Ramsay. Rangitoto Island, moss, 4.vi.72, J.C.Watt. Whitford, leaf litter, 11.iv.48, R.K.Dell. Little Barrier Island, leaf litter, 15.vii.48, C.Parkin. Waiharakeke, leaf litter, i.51 J.W.Donaldson. Wellington. Koith George Memorial Park, Silverstream, moss on rocks, 16.ix.65, M.Luxton. Stokes Valley, moss, 10.viii.52, B.A.Holloway. Kapiti Island, manuka litter, 17.iv.65, J.Moreland. Wairarapa. Solway Show Grounds, Masterton, 16.iii.66, C.L.W. Wairarapa, mixed forest, 22.iv.65, M.Luxton. Stephen Is. leaf litter, 19.v.50, R.R.F. South Island. Nelson. Sandy Bay, moss, 17.viii.65, J.I.Townsend.

#### *Dunedinia decolor* n.sp.

Figs. 193, 194, 195, 198, 199, 201, 204, 207

**Measurements** Carapace length: female 0.80-0.90 mm, male 0.85-1.0 mm Total length: female 1.80-1.95 mm, male 1.75-1.95 mm.

**Description** Carapace: pale brown to brown, with fovea and margins darkened. Chelicerae: in the male, these are somewhat dictyniform (Fig. 201). Abdomen: dorsally more or less white in colour, with a few black chevrons posteriorly; ventrally there is a white patch on a blackish background. Sternum: more or less black. Legs: yellow to brown, annulated

with broad bands of darker brown. The tibial spines are 2211 in both sexes, but rather weak. Tml 0.40-0.45. Epigynum: Figs. 204, 207. Palp: Figs. 193, 194, 195, 198, 199.

The female is readily diagnosed by the epigynum, the male by the embolic division of the palp and by the chelicerae.

**Type.** Holotype male, with paratype males and females, from Otago. Waipiata, ex pitfall, 15.viii.68 (C.L.Wilton); deposited in Otago Museum, Dunedin.

**Records** All these records rank as paratypes.

Canterbury. New Brighton, in marram grass, 11.v.74, A.D.Blest. Otago. North of Tiroti, pitfall, 11.vi.69, C.L.W. Maniototo Station Road, pitfall, 15.v.69, C.L.W. Kokonga School, pitfall, 14.x.67 C.L.W. Corner Little Kyeburn Rd. and Danseys Pass Rd., pitfall, 15.v.69, C.L.W. Naseby Forest, pitfall, 24.ix.67, C.L.W. Wedderburn, pitfall, 11.vi.68, C.L.W. Taieri Bridge, Maniototo, pitfall, 15.v.69, C.L.W. Allans Beach, meadow, pitfall, 14-28.v.53, B.J.Marples.

#### *Dunedinia pullata* n.sp.

Figs. 196, 197, 202, 205

**Measurements** Carapace length: female 0.80-0.85 mm, male 0.85 mm Total length: female 1.75-1.90 mm, male 1.65-1.80 mm

**Description** Both sexes have not been taken together, but their colour indicates that they are the same species. Carapace: pale brown, with blackish fovea and margins. Chelicerae: in the male these are less dictyniform than in the other species (Fig. 202). Abdomen: black. Sternum: more or less black. Legs: yellow-brown, suffused with some dark brown, particularly on the femora and tibiae, but not annulated. Tibial spines 2211 in both sexes. Tml 0.30. Epigynum; Fig. 205; the scape and the



lateral projections are lightly sclerotised and translucent. Palp: Figs. 196, 197.

Both sexes can be diagnosed by the genitalia, coupled with the black unicolourous abdomen.

**Type.** Holotype male from Hyde Rock, Old Man Range, 1585 m Otago, South Island in *Hebe hectori* litter, 12.ii.74 (J.S.Dugdale) deposited in Entomology Division, DSIR, Auckland.

**Records** These rank as paratypes.

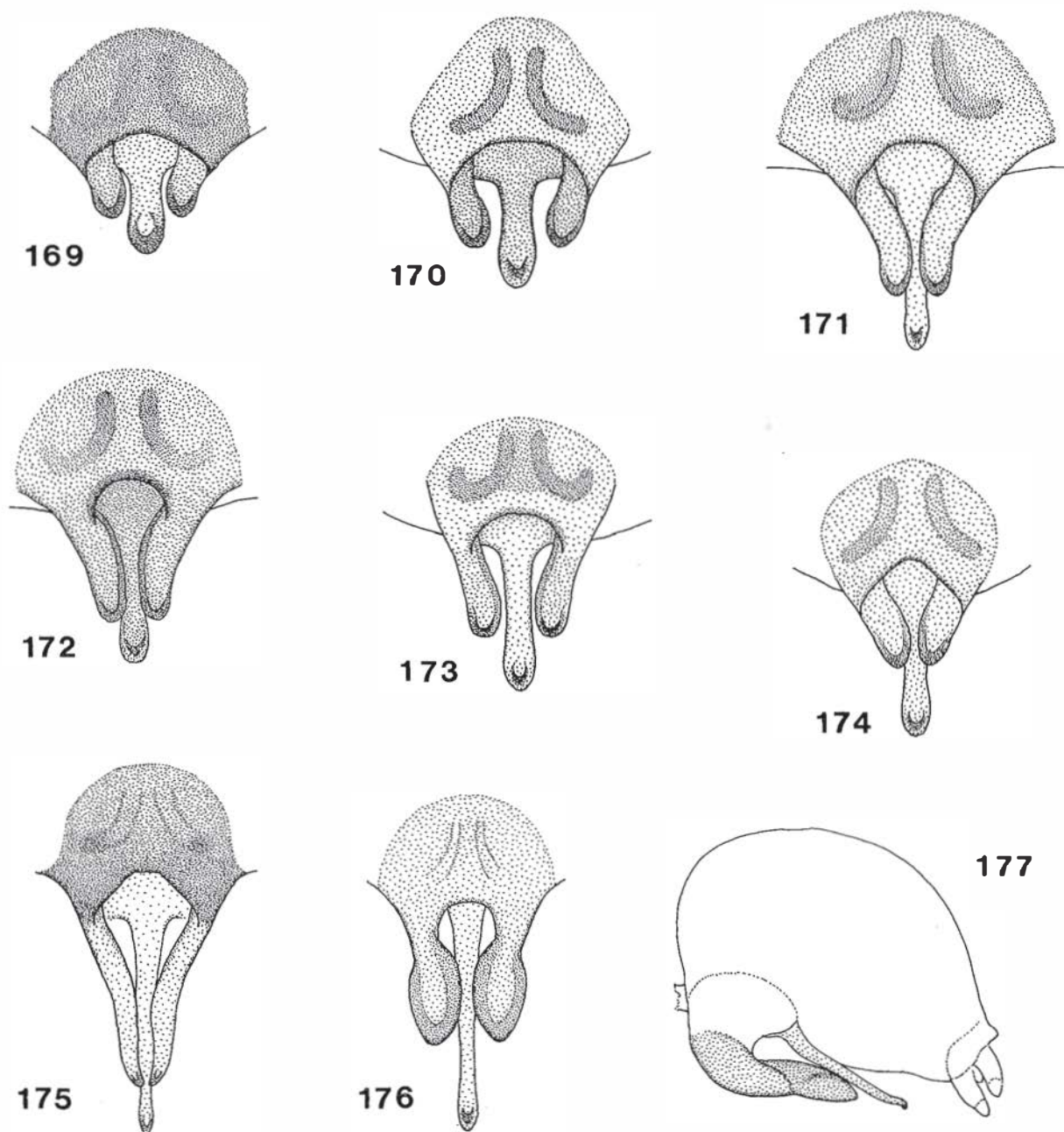
South Island. Canterbury. Arthurs Pass, 920m, subalpine grassland bog, pitfall, 19-21.iii.80, Newton and Thayer. Otago. Rock and Pillar range, 1 mile south Summit Rock 4500 ft., pitfall in herbfield, 29.iv.69, J.Child. Old Woman Range 1389 m, litter *Pimelia*, 26.x.64, J.S.Watt. Mount Maungatua 304 m, litter, 27.iii.73, G.Kuschel.

### *Laperousea Dalmas*

*Laperousea* Dalmas 1918: Ann.Soc.ent.France 86:437; van Helsdingen 1972: Zool.Medec.47:370.

**Type species:** *Laperousea arenaria* Dalmas 1918 (= *Linyphia cupidinea* Simon 1908 = *Linyphia blattifer* Urquhart 1887).

The single known member of this genus has a total length 2.2-3.1 mm. The carapace is unmodified in both sexes; in the male there are some long curved bristles on the clypeus and in the ocular area. The chelicerae have very weak lateral striae in both sexes. The colour and pattern of the abdomen are very variable; glistening white patches are often present. The legs are slender and long. The femora have one dorsal spine, and femora I have an additional prolateral spine. The tibiae have



Figs. 169-177 Epigyna. 169,170 *Laetesia trispathulata* (Urquhart). 170 Type specimen. 171 *Laetesia aucklandensis* (Forster). 172,173 *Laetesia peramoena* (Cambridge). 172 Type specimen. 174 *Laetesia amoena* n.sp. 175 *Laetesia bellissima* n.sp. 176,177 *Laetesia minor* n.sp.

the dorsal spines 2222, plus one prolateral, one retrolateral and one ventral spine, and distally a small cluster of short spines ventrally. The metatarsi are spineless. The female palp has a tarsal claw. The genus is haplotracheate.

The ventral plate of the epigynum is produced posteriorly into a shield, of somewhat variable length and width (Fig. 213). A long, narrow scape, with a small socket distally, arises from the dorsal plate; most of this scape lies within the concavity of the ventral shield (Fig. 214). The genital openings are on the dorsal side of the shield. Internally the ducts run by a simple pathway from the openings to the spermathecae (Fig. 212), which have small subsidiary chambers as in *Laetesia*, *Bathyphantes* etc. The tibia of the male palp is without apophyses. The paracymbium (Fig. 208) is simple, with the tip of the distal arm slightly indented. The tegulum is extended anteriorly into a slender membranous apophysis (TM, Figs. 209, 211), which seems to be somewhat variable in length. The suprategular apophysis (SA, Figs. 209, 211), is long and narrow, weakly emarginate at the tip. The embolic division comprises a broad plate shaped somewhat like an elongated dish (Fig. 209); the dorsal apical margin of the plate carries small denticles. The embolus arises from the inner (lateral) side of the plate. In the uncleared palp, the embolus is concealed behind the embolic membrane (which originates near the base of the embolus), but the form and position of the embolus are visible when the palp is cleared. (Fig. 210).

This genus forms part of the Linyphiinae (s.str.). The epigynum is of the same basic form as those of *Laetesia*, *Cresmatoneta*, *Kaestneria*, etc. The palpal organ is generally similar to those of e.g. *Bathyphantes* or *Porrhomma*, but there appears to have been a considerable degree of fusion of the constituent sclerites.

The genus appears to be monotypic, with the single species distributed throughout Australia and New Zealand (including the Antipodes Islands).

### *Laperousea blattifera* (Urquhart)

Figs. 208-214

*Linyphia blattifera* Urquhart 1887: T.N.Zea.Inst. 19:99;  
*Linyphia cupidinea* Simon 1908: Fauna Sudwest-Australiens, I: 417 (new synonym).

*Stylophora blattifera*: Roewer 1942: Katalog d. Araneae, I: 598.

*Diplostyla blattifera*: Bonnet 1956: Bibliog.Aran. 11(2): 1488.

*Laperousea blattifera*: van Helsdingen 1972: Zool.Medec.47:372.

**Measurements** Carapace length: female 1. 0-1 mm, male 1.2-1.45 mm Total length: female 2.2-3.1 mm, male 2.55-3.1 mm.

**Description** Carapace: yellow to brown, with dusky markings and margins. Abdomen: variable in colour and pattern. The background colour is usually grey to black, with dorsally some shining white patches or longitudinal lines, and ventrally with 2 longitudinal white stripes. Sometimes, however, there is a clearly defined white median line dorsally, with chevrons posteriorly; and sometimes the background colour has a pinkish tinge. Sternum: orange, faintly suffused with black, or pale yellow with darker margins. Legs: yellow to brown, sometimes faintly annulated with deeper brown. Spines as in the generic description. Epigynum: Figs. 212, 213, 214; the length of the ventral shield is somewhat variable, and sometimes the scape is almost completely hidden. Palp: Figs. 208-211 the size of the palp, the length of the suprategular apophysis, and the position and length of the tegular membrane, show some variations. In smaller specimens, the plate of the embolic division may be less denticulate anteriorly.

Comparison of New Zealand specimens of *L.blattifera* with the lectotypes of *L.cupidinea*, and with other specimens of *L.cupidinea* from Australia, show that the palpal organs of the

two species are identical; the epigyna also appear to be identical both externally and internally, apart from small variations in the length and breadth of the ventral shield. As suggested by van Helsdingen (1972), therefore, *L.cupidinea* (Simon) is now regarded as a synonym of *L.blattifera* (Urquhart).

**Types.** Two males, one female, labelled "types", Waiwera from the Urquhart collection in the Canterbury Museum although the specimens are in a poor state, the male palp and the female epigynum are in a satisfactory condition.

**Records** Three Kings Islands. Castaway Camp, xi.70. G.W.Ramsay. North Island. North Auckland. Mimiwhangata, 10.xii.70, J. Darby. Paihia, xii.51, K.P.Lamb. Te Hoka, Tom Bowling Bay, 28.xi.60, B.A.Holloway. Glenberry Forest, near Whangarei, 14.iv.60, C.W. O'Brien. Tauranga Bay, swept ex foliage, 28.ix.66, K.A.J.Wise. Opononi, on foliage, 8.i.67, R.R.F. Hawkes Bay, Taradale, 12.i.67, R.W.Hutton. Clifton, on foliage, 1.i.47, R.R.F. Waitetola, 11.v.68, R.W.Hutton. South Auckland. Turangi, 19.xii.50, M.Foord. Lake Taupo, near Turangi, East Coast. Lake House, Waikaremoana, on foliage, 15.xii.46, N.R.F. Mt. Ngamohu Track, Waikaremoana, 2000ft., on ferns, 9.xii.46, R.R.F. Wairoa, 2.i.50, J.Dawbin. Wellington. Kapiti Island, v.47, R.R.F. Wairarapa, Te Wharau, 12.ix.67, C.L.W. South Island. Nelson. Moss's Bush, Riwaka, 7.ii.69, C.L.W. 76/28 Brooklyn Domain, Motueka, 6.ii.69, C.L.W. Anisced Valley, 1.xii.53, B.J.Marples. Marlborough. Picton, 24.iii.69, R.R.F., C.L.W. Hapuka River, Kaikoura, 16.iii.69, R.R.F. Quinneys Bush, Motupiko, 12.ii.69, C.L.W. Canterbury. Okuti Valley, 22.xi.75, R.R.F. Waipara Gorge, iv.49, R.R.F. Prices Bush, 10.i.46, J.T.Salmon. Otago. Leith Saddle, 30.ix.73, R.R.F. Mount Cargill, 2.vi.69, C.L.W. Dunedin, 10.x.58, R.R.F. Queenstown, 4.xi.58, R.R.F. Akatore, 9.x.65, C.L.W. Southland. Colac Bay, 24.xi.70, R.R.F., C.L.N. Stewart Island. Halfmoon Bay, vi.50, O.Allan. Antipodes Island. West Plain. litter, 14.ii.69, G.Kuschel.

### *Diploplecta* n.gen.,

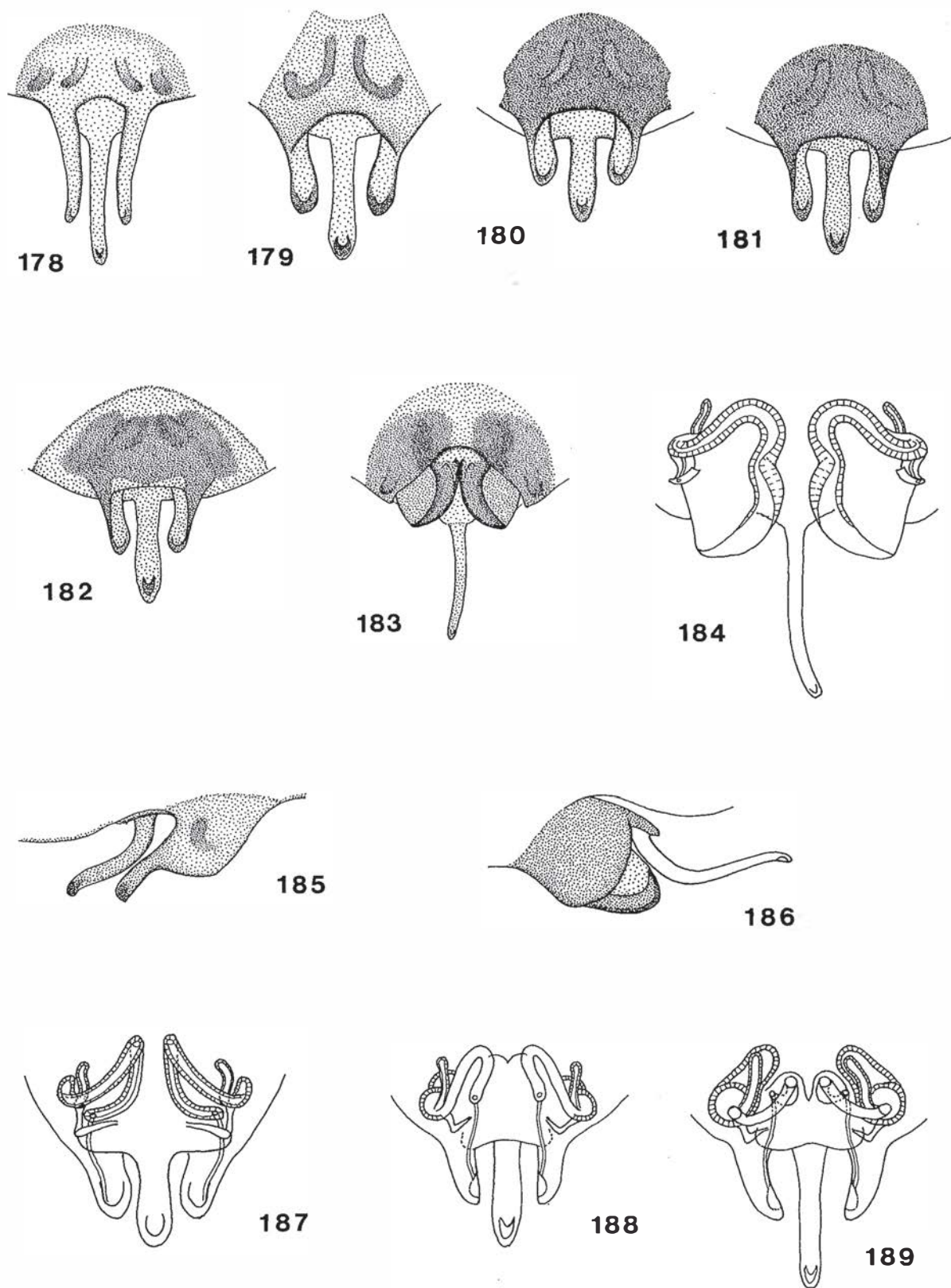
**Etymology:** from the Greek diplos - double, plecta - a coil; gender feminine.

**Type species:** *Diploplecta communis* n.sp.

This genus comprises small spiders (1.5-2.0 mm total length), which are usually rather pale in colour. The carapace, which carries no lobes or other appendages, has a median row of several long bristles; the male clypeus bears numerous short, fine hairs. The chelicerae have a weak lateral file in both sexes. The abdomen has a variable pattern of black markings. The legs are moderately long. Femur I has one prolateral spine, with the remaining femora spineless. The tibiae have 2 long spines dorsally, and tibia I has in addition a prolateral and a retrolateral spine, while tibia II has 1 retrolateral. The metatarsi are spineless; metatarsi I-III have a dorsal trichobothrium, with TmI 0.25-0.30. The female palp has a tarsal claw. The members of the genus are haplotracheate.

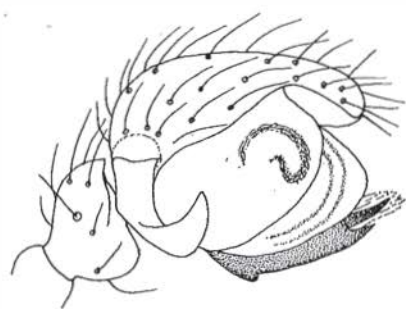
The epigynum is similar in its external form in all the species. There is a well defined atrium (A, Fig. 216) enclosed between the ventral and dorsal plates; the dorsal plate is extended posteriorly as a narrow scape which carries a minute socket distally, and there is in most species a short pseudoscape (PS, Fig. 224) which projects from the ventral plate over the entrance to the atrium. The genital openings lie inside the atrium. Internally the duct arrangement (e.g. Fig. 225) is unlike that of any other member of the Linyphiidae. From the genital openings the duct follows a double helical pathway inside one arm or a V-shaped envelope, and then passes to the other arm where it again forms a double helix; this latter helix leads to a blind tube, bent into various configurations, which seems to be the spermatheca. The helical form of the duct is simplified in *D.adjacens* and *D.simplex* (Figs. 231, 232). The fertilisation duct arises from the basal end of the spermatheca, and runs a short distance posteriorly to open near the margin of the dorsal plate of the epigynum. The tibia of the male palp has no apophyses. The



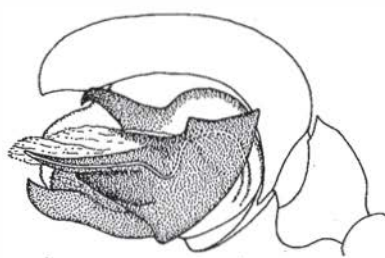


Figs. 178-189 Epigyna. 178 *Laetesia germana* n.sp. 179, 185, *Laetesia chathamii* n.sp. 180, 181 *Laetesia minor* n.sp. 180 Type specimen. 182 *Laetesia distincta* n.sp. 183, 184, 186 *Novalaetesia anceps* n.sp. 187-189 Internal genitalia. 187 *Laetesia trispathulata* (Urquhart). 188 *Laetesia minor* n.sp. 189 *Laetesia distincta* n.sp.

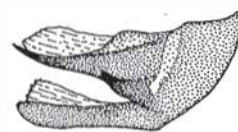




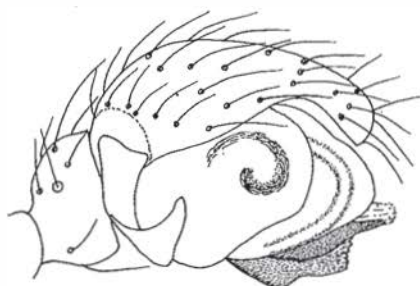
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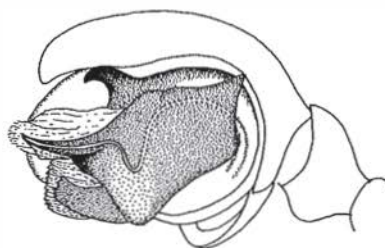
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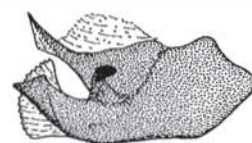
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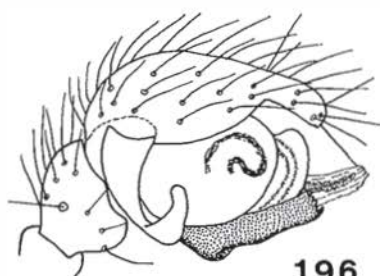
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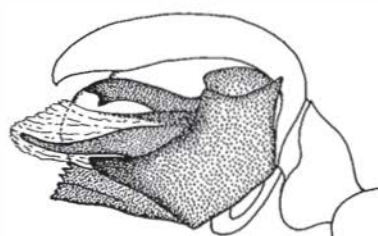
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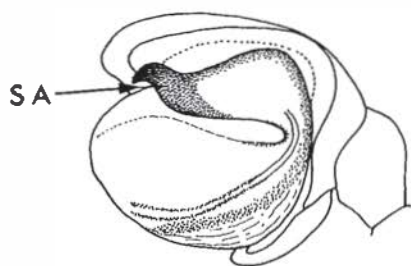
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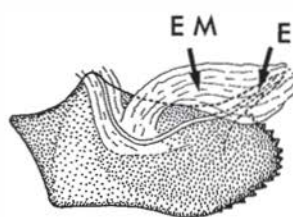
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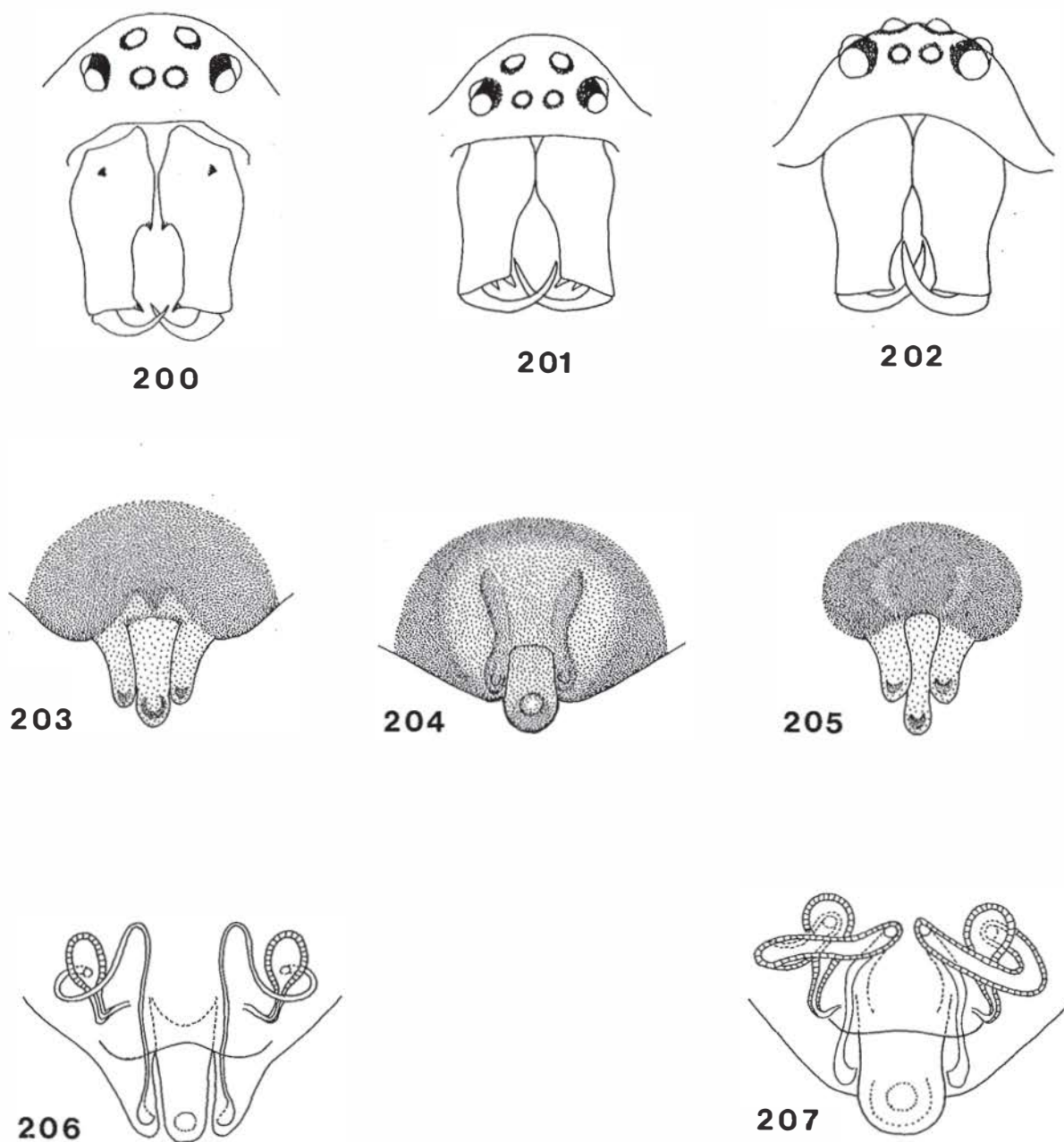


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Figs. 190-199 Palps. 190-192 *Dunedinia denticulata* n.sp. 190 Ectal. 191 Mesal. 192 ED in expanded palp. 193-195, 198-199 *Dunedinia decolor* n.sp. 193 Ectal. 194 Mesal. 195 ED in expanded palp. 198 Mesal, ED removed. 199 ED lateral. 196-197 *Dunedinia pullata* n.sp. 196 Ectal. 197 Mesal.

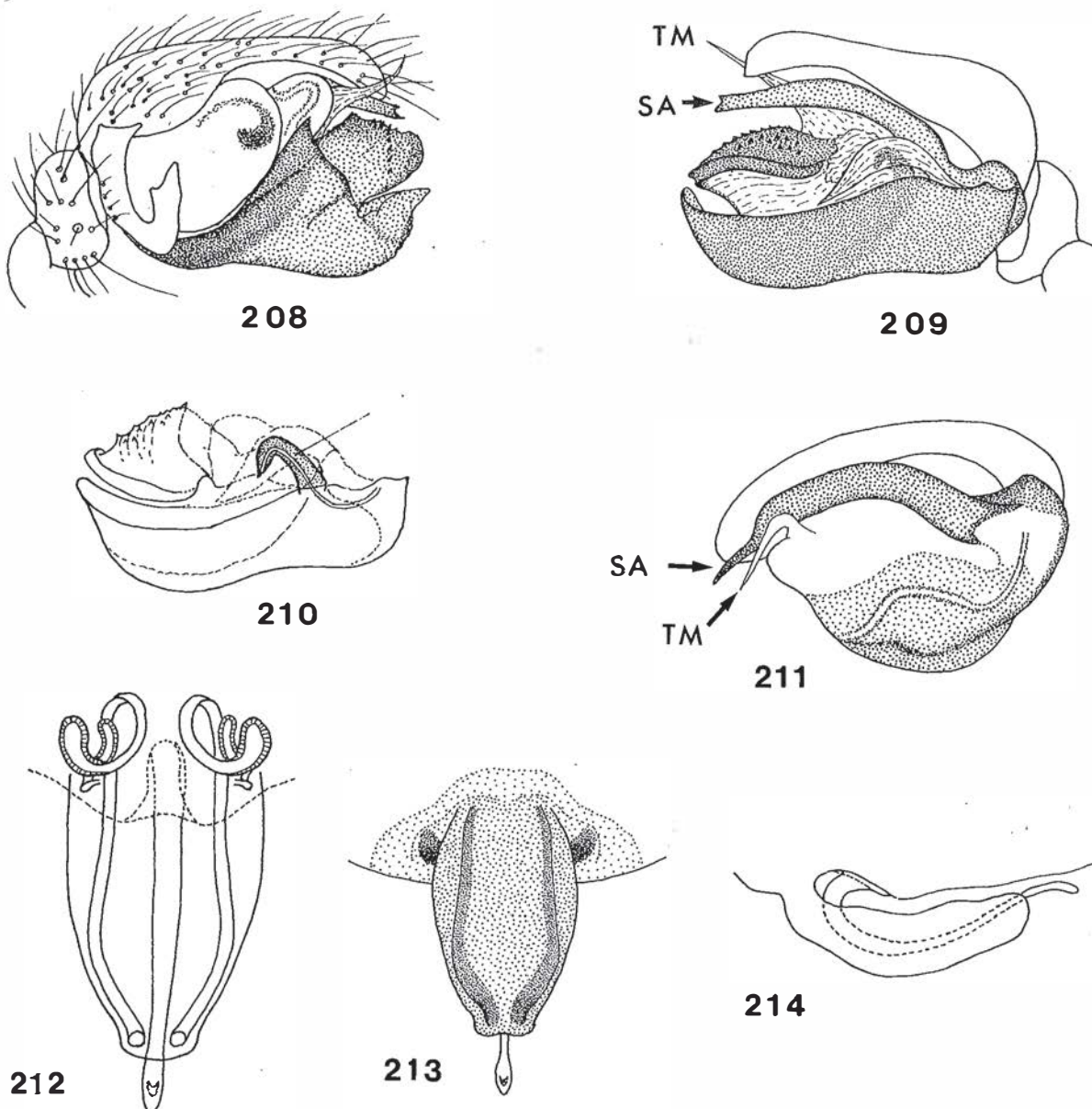


Figs. 200,203,206 *Dunedinia denticulata* n.sp. 200 male chelicera. 203 epigynum. 206 Internal genitalia. Figs. 201,204,207 *Dunedinia decolor* n.sp. 201 Male chelicera. 204 Epigynum. 207, Internal genitalia. Figs. 202,205 *Dunedinia pullata* n.sp. 202 Male chelicera. 205 Epigynum.

paracymbium has a narrow basal arm, and a broad lightly sclerotised distal arm (Fig. 221) which is difficult to see against the background of the haematodocha/subtegulum. The tegulum of the palpal organ carries a lightly sclerotised, hook-shaped apophysis anteriorly (TA, Fig. 221). The suprategulum lies towards the posterior of the organ, and there is a long suprategular apophysis (SA, Fig. 222). The embolic division is a broad plate which carries several sclerites (Fig. 223); the plate is drawn out to a point on its lower distal corner. The stalk, which carries the duct from the suprategulum to the embolic division, joins the plate near its centre; the duct runs anteriorly, along a lightly sclerotised band, to the slender, curved embolus (E, Figs. 222,223). In addition to the embolus there are 3 sclerites arising from the

inner (lateral) side of the plate. These are: (i) a paddle-shaped, lightly sclerotised member (1, Figs. 222,223). (ii) a stout, sickle-shaped member (2, Figs. 222, 223), which originated from near the centre of the plate and terminates very close to the base of the embolus; and (iii) the "embolic membrane" (3, Figs. 222, 223) which arises from near the junction of the stalk with the plate: the end of the embolus lies on this membrane.

Taxonomically this genus is a difficult one. Numerous males of *Diploplecta* have been collected, including some taken in company with



Figs. 208-214 *Luperousea blattifera* (Urquhart) 208 Palp ectal. 209 Palp mesal. 210 Palp ED cleared. 211 Palp ventro-mesal, ED removed. 212 Internal genitalia. 213 Epigynum. 214 Epigynum lateral view.

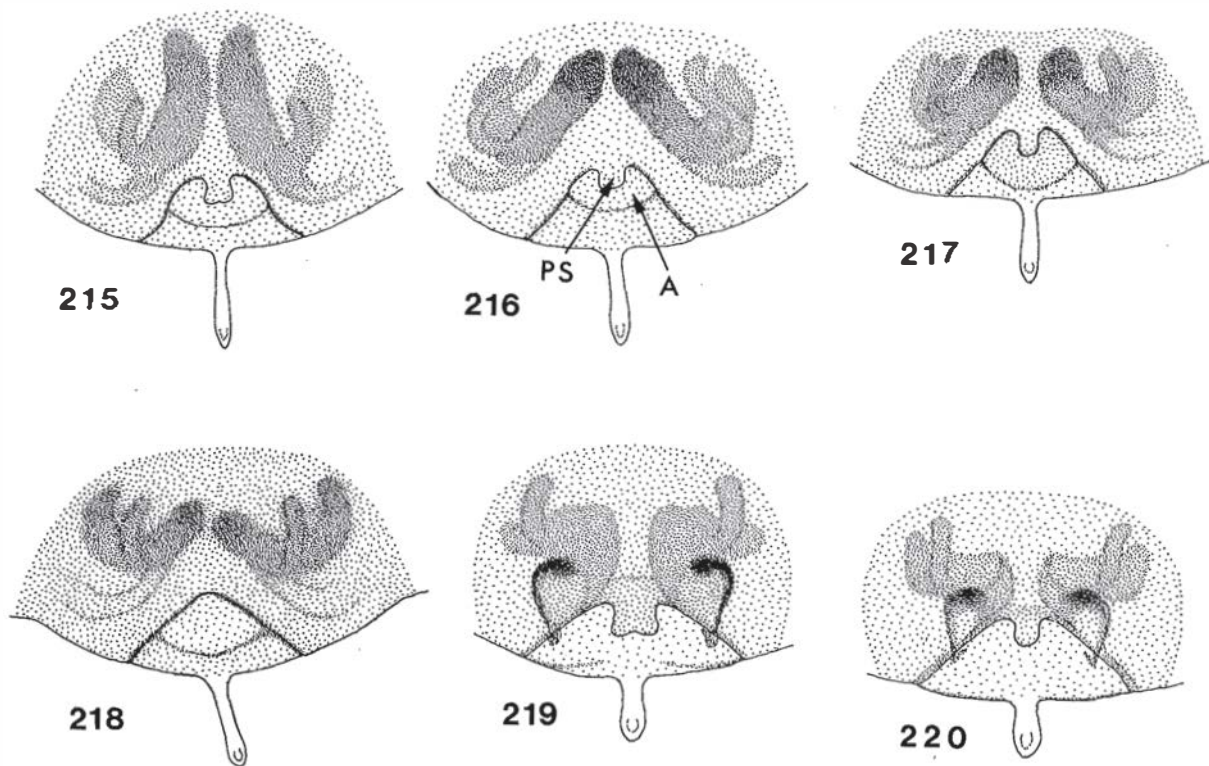
the females of 4 of the 7 species described below the palpal organs of all these males appear to be indistinguishable. Consequently the normal procedure within the Linyphiidae of separation into species on the basis of the structure of the palpal organs cannot be used in this genus. Since the external structure of the epigynum is also more or less constant throughout the genus, it has been necessary (for the most part) to split the genus into species on the basis of the internal epigynal structure. The extent of the intraspecific variation of this structure is not known; the differences in the duct configuration between that shown in Fig. 224 and shown in Fig. 232 are certainly too great to be regarded as intraspecific variation, but in the present work it is assumed that even the

change in the double spiral from 4 crossovers (Fig. 224) to 3 crossovers (Fig. 226) justifies the description of *D. proxima* n. sp. as a species distinct from *D. communis*.

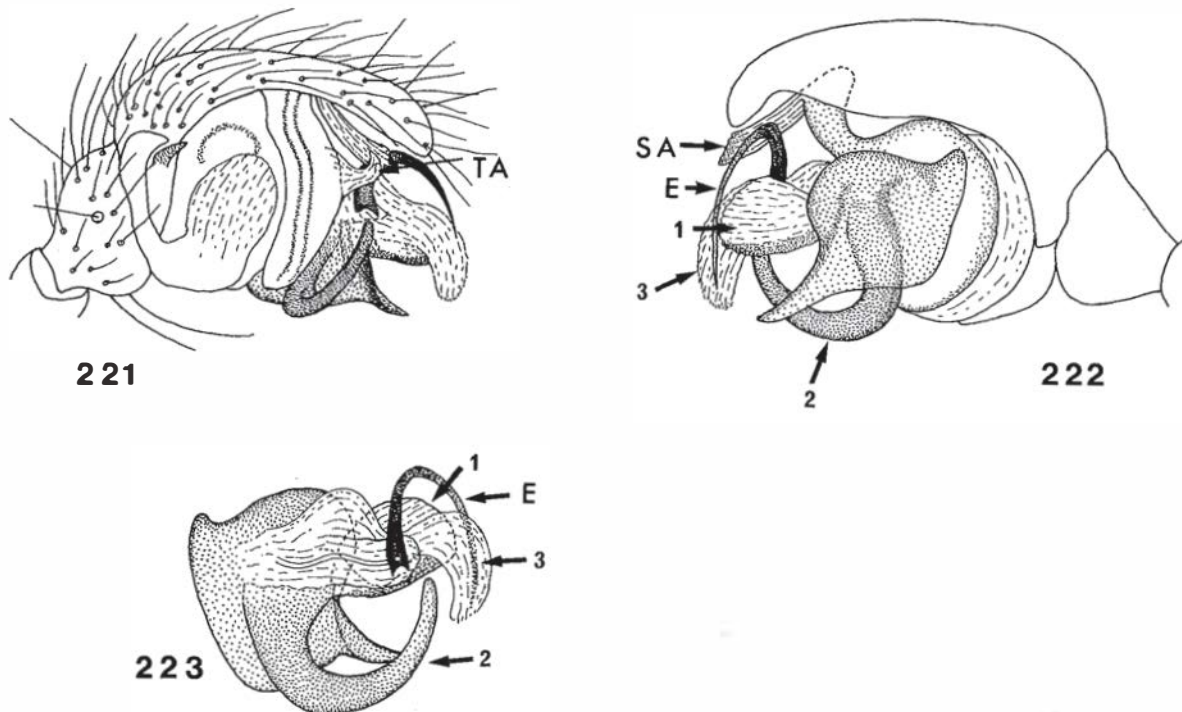
The genus needs further study, preferably on the spot in New Zealand where the collection and examination of numerous specimens from elected areas would establish the degree of variability within each species. Such a study might lead to the elimination of some of the species described here, or, alternatively might result in the recognition of additional species.

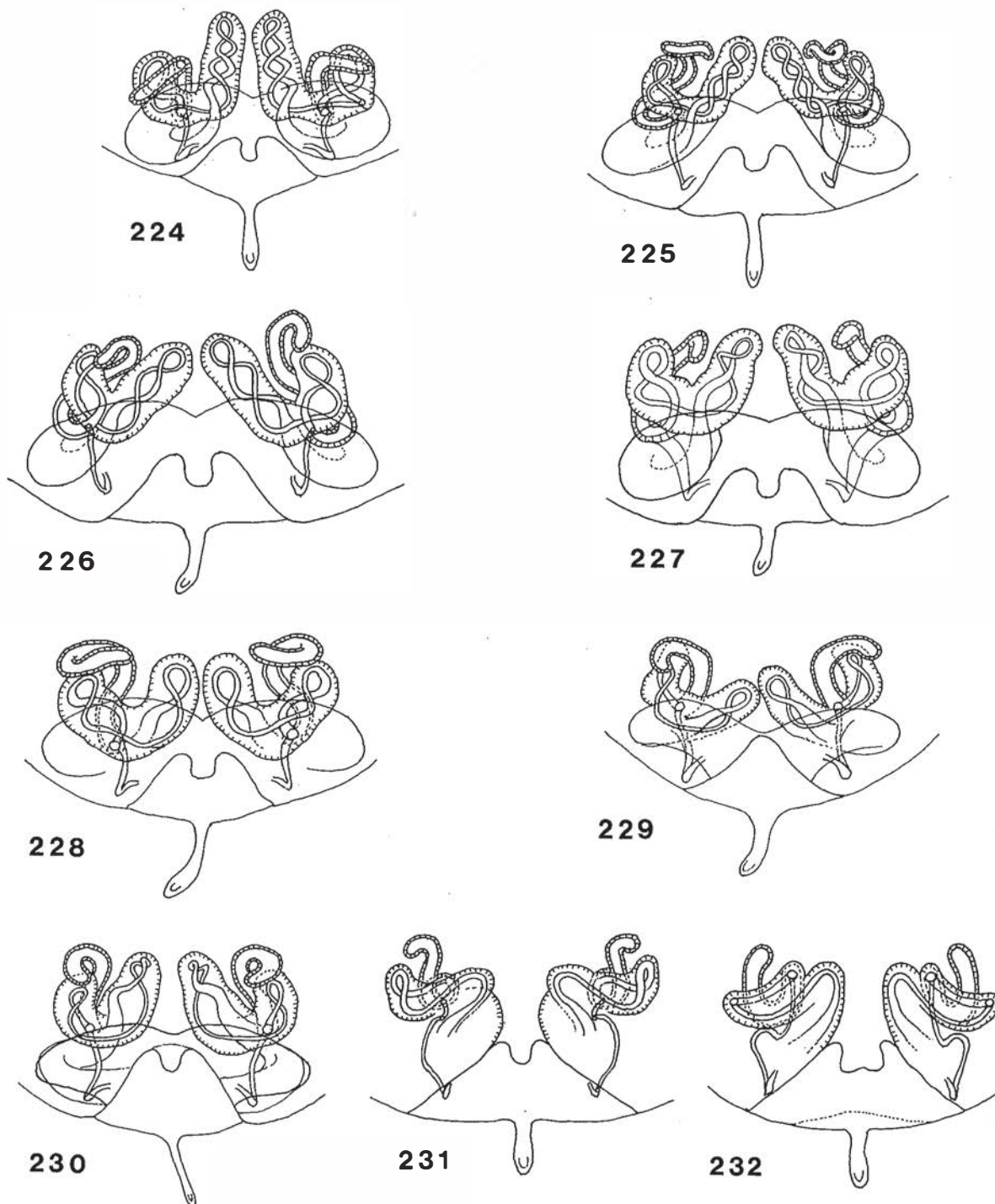
The diagnosis of males of *Diploplecta* to species level is impossible in most cases, unless the male is taken with a female. Diagnosis of the females is also far from simple. The outlines of the internal





Figs. 215-220 Epigyna. 215-216 *Diplopecta communis* n.sp. 215 Type specimen, 217 *Diplopecta duplex* n.sp. 218 *Diplopecta nuda* n.sp. 219 *Diplopecta simplex* n.sp. 220 *Diplopecta adjacens* n.sp. Figs. 221-223 *Diplopecta communis* n.sp. Male palp. 221 Ectal. 222 Mesal. 223 ED lateral.



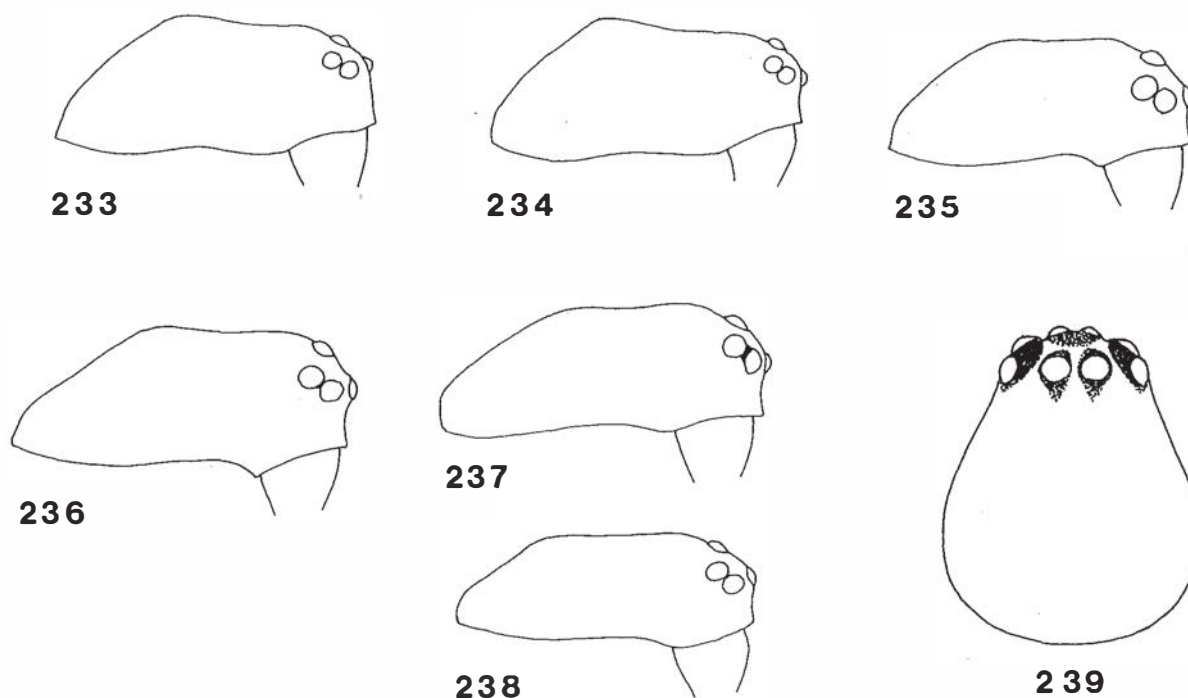


Figs. 224-232 Female internal genitalia from above. 224-225 *Diplopecta communis* n.sp. 224 Type specimen. 226,227 *Diplopecta proxima* n.sp. 226 Type specimen. 228 *Diplopecta duplex* n.sp. 229 *Diplopecta nuda* n.sp. 230 *Diplopecta opaca* n.sp. 231 *Diplopecta adjacens* n.sp. 232 *Diplopecta simplex* n.sp.

epigynal structure, seen through the integument of the epigynum (Figs. 215-220), can be useful in reaching a provisional diagnosis, but it is seldom possible to achieve a completely reliable diagnosis by this means. The females can be diagnosed with certainty only by examination of the internal genitalia, which necessitates excision of the

epigynum followed by clearing (e.g. in clove oil, methyl salicylate or methyl benzoate) and examination by transmitted light. This procedure, with these tiny epigyna, is laborious and time-consuming, but at the present time there is, in most cases, no alternative.

The genus *Diplopecta* forms part of the



Figs. 233-239 Carapace. 233,234 *Diplopecta communis* n.sp. 233 Female. 234 Male. 235-236 *Diplopecta duplex* n.sp. 235 Female. 236 Male. 237 *Diplopecta opaca* n.sp. female/male. 238 *Diplopecta simplex* n.sp. 239 *Diplopecta opaca* n.sp. dorsal.

*Linyphia* group (*Linyphiinae s.str.*: Millidge 1984). The palpal organ is essentially of the same form as that present in e.g. *Bathyphantes* Menge, *Kaestneria* Wiehle or *Porrhomma* Simon. The external form of the epigynum (well-defined atrium, scape/socket arising from the dorsal) plate is typical of the *Linyphiinae s.str.*. The internal duct configuration is however quite distinct from that of other members of this group, though there may be some affinities with *Labulla* Simon, which also has the duct system in the form of 2 double spirals. Several genera in *Linyphiinae (s.tr.)* have the ducts in the form of single spirals, and the double spiral form may represent a more primitive form. *Diplopecta* appears to be endemic to New Zealand, and at the present time 7 species are recognised.

#### *Diplopecta communis* n.sp.

Figs. 215, 216, 221-225, 233, 234

**Measurements** Carapace length: female 0.7-0.8 mm, male 0.8-0.9 mm Total length: female 1.55-2.0 mm, male 1.6-1.9 mm

**Description** Carapace: pale yellow to pale orange-brown in colour, with a longitudinal median dark strip and narrow dark margins; the median stripe is occasionally absent. The carapace slopes upwards behind the eyes in both sexes (Figs. 233,234). Abdomen: dorsally white to pale yellow or pale grey, with a median broken black line, or irregular dark

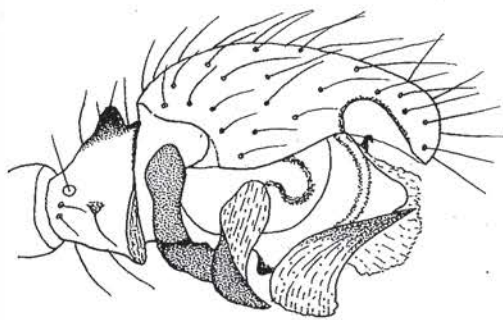
chevrons. The sides are mottled black, while ventrally the colour varies from pale yellow with irregular grey or black markings, to almost completely black. Sternum: pale yellow, with blackish margins. Legs: pale yellow to pale brown; spines typical of the genus. Tml 0.25-0.30. Epigynum: the 2 forms shown in Figs. 215, 216 and Figs.224, 225 sometimes occur in the same population, and it is assumed that they are the one species. Internally the median double spiral has 4 crossovers. Palp: Figs. 221-223.

The female is diagnosed by the cleared epigynum. Males can be diagnosed by the carapace profile as either *D. communis* or *D.proxima*.

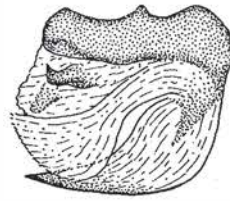
**Type.** Holotype female North Island. Hawkes Bay, Waitetola, 8-11.v.67 (R.W.Hutton); deposited in Otago Museum.

**Records** All these records rate as paratypes. North Island. Hawkes Bay. Waitetola, 8.xi.67, R.W.Hutton. Wairarapa. Mangareia, 24.viii.67, C.L.W. North of Mt.Bruce, pitfall, 1-8.x.69, C.L.W. South Island. Nelson. Pretty Bridge Valley, 7.vii.66, pitfall in pasture, G.Hitchings. Takaka Hill, 21.vi.65, C.L.W. Pearse River, Motueka Valley, 6.ii.69, C.L.W. Marlborough. Canoe Bay, French Pass, 1070 ft., moss and lichen, 27.viii.65, J.I.Townsend. Mount Altimerlock, Black Birch Range, 1500m, moss, 17.ii.70, G.Kuschel. Canterbury. Broken River, near Castle Hill Station, 20.ix.66, C.L.W. Westland. Hokotika, grass above beach, 14.vii.74, A.D.Blest. Lewis Pass, 25.iv.77, R.R.F. near Granity, 28.ix.66, C.L.W. Otago. Fillyburn Bridge, pitfall, 17.iv.69, C.L.W. Deepdell, pitfall, 29.viii.68, C.L.W. Wedderburn, pitfall, 21.ii.68, C.L.W. Millers Flat, 500m, pitfall, viii.70, E.Barratt. Waipori, 52m, pitfall, B.Barratt. Macraes Flat, pitfall, 15.viii.68, C.L.W. North of Tiroti, pitfall, 12.ix.68, C.L.W. Mount Bitterness, 1524m, litter, J.S.Dugdale. Rocklands, 800m, pitfall, 10-24.x.78, B.Barratt. Tokomairiro Riverbank, 25.xii.67, C.L.W. Allans Beach, pitfall in sand dunes, 28.viii.66, R.R.F. Akatore, 9.x.65, C.L.W.

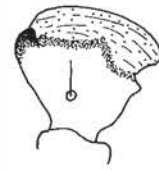




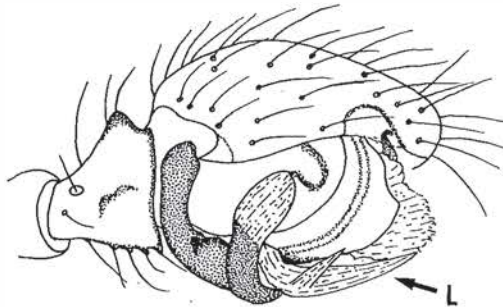
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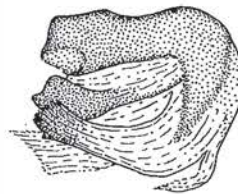
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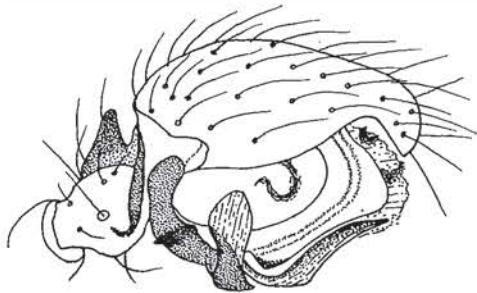
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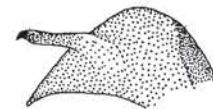
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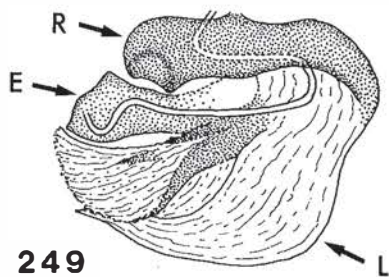
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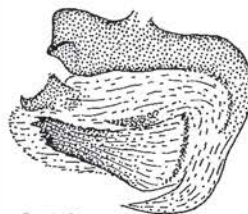
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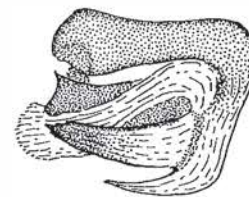
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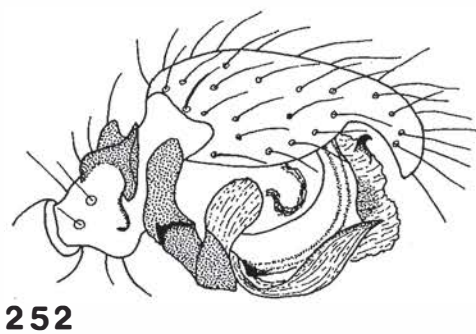


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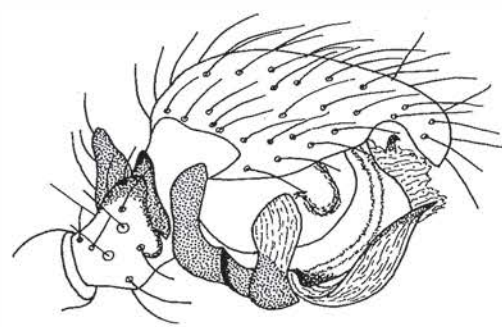


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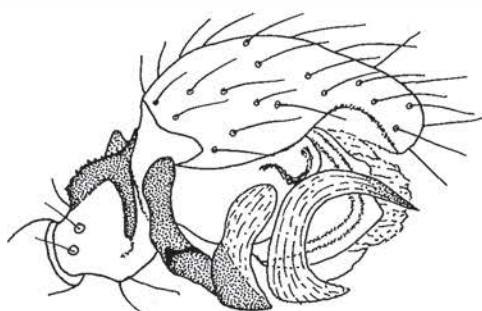
Figs. 240-251 Palps *Maorineta* sp. 240-242, 248, *Maorineta tibialis* n.sp. 240 Ectal. 241 ED mesal. 242 Tibia dorsal. 248 Suprategular apophysis mesal. 243-245 *Maorineta sulcata* n.sp. 243 Ectal. 244 ED mesal. 245 Tibia dorsal. 246-247 *Maorineta tumida* n.sp. 246 Ectal. 247 Tibia dorsal. 249 *Maorineta mollis* n.sp. ED mesal to show position of embolus and duct. 250 *Maorineta gentilis* n.sp. ED mesal. 251 *Maorineta acerba* n.sp. ED mesal.



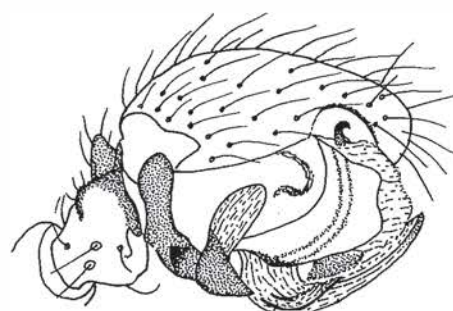
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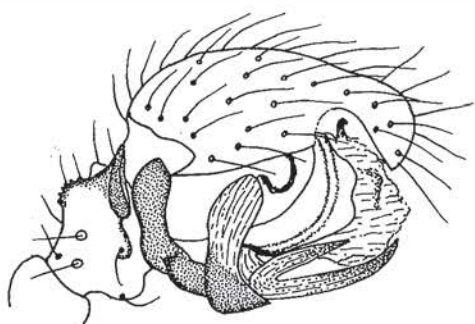
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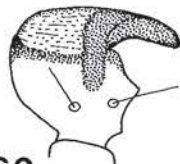
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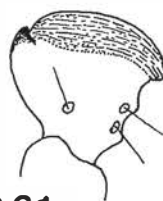
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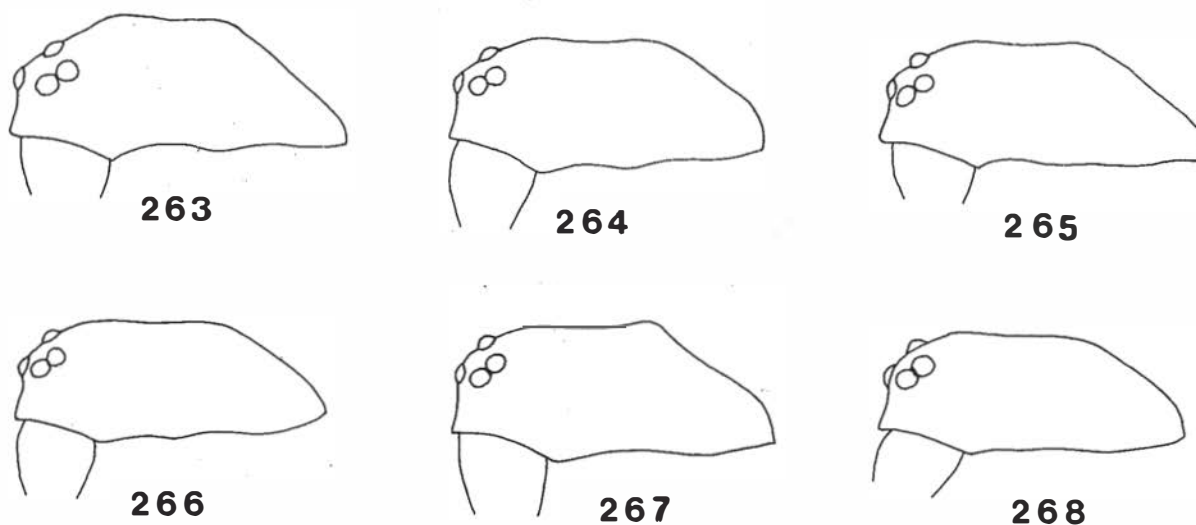


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Figs. 252-262 Palps. 252-253, 257-259 *Maorineta mollis* n.sp. 252,253 Ectal. 257-258 Tibia mesal. 259 Tibia dorsal. 254,260. *Maorineta minor* n.sp. 254 Ectal. 260 Tibia dorsal. 255,261 *Maorineta gentilis* n.sp. 255 Ectal. 261 Tibia dorsal. *Maorineta acerba* n.sp. 256 Ectal. 262 Tibia dorsal.



Figs. 263-268 female Carapace. 263 *Maorineta tibialis* n.sp. 264 *Maorineta sulcata* n.sp. 265 *Maorineta tumida* n.sp. 266 *Maorineta minor* n.sp. 267 *Maorineta gentilis* n.sp. 268 *Maorineta mollis* n.sp.

### *Diplopecta proxima* n.sp.

Figs. 226, 227

**Measurements** Carapace length: female 0.8 mm, male 0.8 mm  
Total length: female 1.7-1.8 mm, male 1.8 mm

**Description** Carapace: pale yellow in colour, with a median black stripe and blackish margins; the profile is indistinguishable from that of *D. communis* (Fig. 233, 234). Abdomen: white to pale yellow, with occasionally a few black spots dorsally, and with variable and irregular grey bars on the sides and ventrally. Sternum: pale yellow with blackish margins. Legs: pale yellow to pale orange-brown in colour. Spines typical of the genus. TmI 0.28-0.30. epigynum: Figs. 226, 227; in external appearance this is probably indistinguishable from that of *D. communis*. Internally the median double spiral duct has 3 crossovers. Palp: indistinguishable from those of other *Diplopecta* species.

The female is diagnosed by the cleared epigynum. Males can be diagnosed as either *D. proxima* or *D. communis* by the carapace profile.

**Type.** Holotype female from Reef Point, South Beach, Antipodes Islands, in litter of *Poa foliosa*, 6.ii.69 (G.Kuschel); deposited in Entomology Division, DSIR, Auckland.

**Records** All these records rank as paratypes. South Island. Nelson. Pretty Bridge Valley, pitfall in pasture, 2.xi.66, G.Hitchings. Rough Island, 3.viii.67, J.C.Watt. Canterbury. Peel Forest, 20.i.82, R.R.F. Arthurs Pass, 920m, subalpine grassland-bog, 19-21.iii.80, M.Newton, Thayer. Snares Island, litter, 11.iii.71, J.S.Horning. Beating *Poa astori*, 24.i.67, P.M. Johns. North Plain, litter, 14.ii.69, G.Kuschel.

### *Diplopecta opaca* n.sp.

Figs. 230, 237, 239

**Measurements** Carapace length: female 0.75-0.80 mm, male 0.75-0.80 mm Total length: female 1.6-1.8 mm, male 1.55-1.6 mm

**Description** Carapace: the colour is brown, with a darker median stripe and darker margins, to deep brown with no visible markings; carapace profile Fig. 237. The posterior eyes (in both sexes) are noticeably large in size, and less than 0.5 diam. apart (Fig. 239). Abdomen: variable in colour: usually white dorsally, with the sides and ventral surface white or

grey; occasionally, particularly in the male, with a black median stripe on a white background dorsally, or completely black. Sternum: dark brown to black. Legs: yellow-brown to orange, with the femora sometimes suffused with deeper brown. Spines typical of the genus. TmI ca. 0.3. Epigynum. The epigynal area is fairly dark in colour, obscuring the internal structure. Internally (Fig. 230) the duct arrangement is rather similar to that of some specimens of *D. proxima*. Palp: indistinguishable from those of other *Diplopecta* species.

This species can be diagnosed in most cases by the dark colour, particularly of the carapace and sternum, and by the large posterior eyes (but *D. duplex* and *D. nuda* also have fairly large posterior eyes).

**Type.** Holotype female from Makarora Valley, in moss 12.xii.77 (R.R.Forster); deposited in Otago Museum.

**Records** All these records rank as paratypes. South Island. Westland. Riordans Bridge, Lewis Pass, 16.viii.66, C.L.W. Makarora, Camerons Flat, litter, beech forest, 13.iii.66, R.R.F. Fiordland: Takahē Valley, near Te Anau, 11.i.49, J.H. Sorensen. High Falls Creek, Hollyford Valley, forest litter, 10.xii.66, A.K.Walker. Airstrip west of Lake Alabaster, dry beech litter, 11.i.67, A.K. Walker. Jacksons Bay, moss, 15.iii.66, R.R.F. Snares Island. Broughton Island, sweeping foliage, 20.x.72, J.S. Horning.

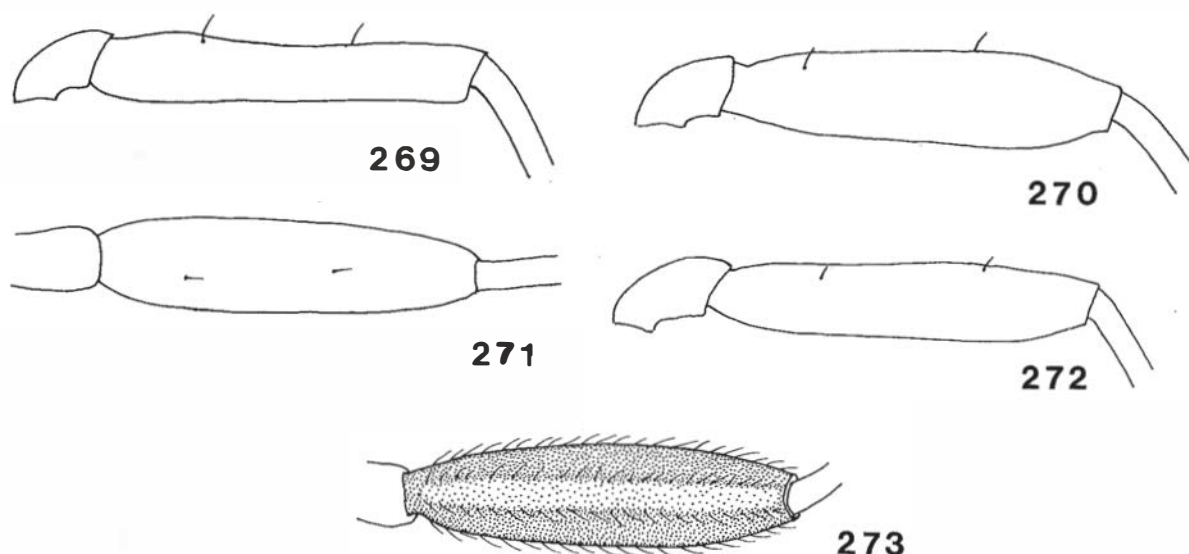
### *Diplopecta duplex* n.sp.

Figs. 217, 228, 235, 236

**Measurements** Carapace length: female 0.65-0.70 mm, male 0.75-0.80 mm Total length: female 1.5-1.75 mm, male 1.5 mm

**Description** Carapace: yellow to orange, with an irregular median black stripe and black margins. Carapace (Figs. 235, 236) less steeply raised behind the eyes than in *D. communis*. The posterior median eyes are fairly large, but rather smaller than in *D. opaca*. Abdomen: dorsally white, with a median black stripe and blackish chevrons posteriorly, these markings being variable; the sides are black, mottled with white, and ventrally the colour is pale whitish yellow with variable black markings. Sternum: yellow to pale brown with black margins. Legs: pale brown to orange-brown. Spines typical of the genus. TmI ca. 0.3. Epigynum: viewed externally (Fig. 217), the median chambers appear shorter than in *D. communis* or *D. proxima*; internally (Fig. 228) the median double spiral duct has 2 crossovers. Palp: indistinguishable from those of other *Diplopecta* species.





Figs. 269-273 Tibiae I Male. 269,271 *Maorineta tibialis* n.sp. 269 Lateral. 271 Dorsal. 270,273 *Maorineta sulcata* n.sp. 270 Lateral. 273 Ventral. 272 *Maorineta tumida* n.sp. Lateral.

The female is diagnosed by the cleared epigynum; the male cannot be diagnosed unless taken with the female.

*Type.* Holotype female from Catlins, near Puketiro Road, 31.viii.66 (R.R.Forster); deposited in Otago Museum.

*Records* All these records rank as paratypes. North Island. Rimu Bush, Golden Stairs Road. Mareretu District, 9.viii.67, K.A.J.Wise. South Island. Otago. Pisa Range, gully behind Lake Mackay, 1740 m, litter, 23.xi.74, J.C.Watt. Waipori, 18.iii.77, R.R.F.

***Diploplecta nuda* n.sp.**

Figs. 218, 229.

*Measurements* Carapace length: female 0.85 mm total length: female 2.1 mm

*Description* Only the female is known. Carapace: pale brown, with a faint darker median stripe and faint blackish margins. The profile is similar to that of *D.opaca*. The posterior median eyes are fairly large, but rather smaller than those of *D.opaca*. Abdomen: in the single specimen known, this is pale grey in colour, without markings. Sternum: pale yellow-brown, with margins suffused with black. Legs: yellow-brown. Spines typical of the genus. Tml 0.23. Epigynum this lacks a pseudoscape on the ventral plate (Fig.218), internally (Fig.229) the duct arrangement is very similar to that of *D.duplex*. It is possible that this specimen is an abnormal example of *D.duplex*. The female is diagnosed by the absence of the pseudoscape.

*Type.* Female holotype from Homer, Fiordland, 16.ii.66 (R.R. Forster) deposited in Otago Museum.

***Diploplecta simplex* n.sp.**

Figs. 219, 232, 238

*Measurements* Carapace length: female 0.80 mm Total length: female 1.90 mm

*Description* Only the female is known. Carapace: pale yellow in colour, with a broken median black stripe and narrow blackish margins. Carapace profile Fig. 238. Abdomen: dorsally whitish yellow, with 3 longitudinal rows of black dots; ventrally pale yellow, with faint black patches. Sternum: pale yellow to pale brown, With a narrow blackish margin. Legs: pale brown. Spines typical of the genus. Tml ca. 0.25. Epigynum; Fig.219; easily distinguishable from those of the

other *Diploplecta* species, except for *D.adjacens*. Internally (Fig.232) the duct arrangement resembles that of *D.adjacens*, but the lateral portion of the duct, as well as the median portion, lacks the spiral configuration.

This species can probably be diagnosed by the epigynum, but confirmation should be obtained by clearing the epigynum.

*Type.* Female holotype from Mangareia, Masterton, 3.xi.46 (C.L.Wilton); deposited in Otago Museum.

*Records* North Auckland. Ten miles north of Dargaville, swept from grass, 10.ii.50, B.J.Marples (female paratype)

***Diploplecta adjacens* n.sp.**

Figs. 220, 231

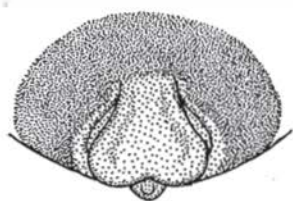
*Measurements* Carapace length: female 0.70 mm Total length: female 1.65 mm

*Description* Only the female is known. Carapace: pale yellow in colour, with a faint median grey stripe and faint grey margins. The carapace profile is identical with that of *D.simplex*. Abdomen: very pale yellow, with dorsally a broken median black line, and with variable grey or black patches on the sides and ventrally. Sternum: pale yellow, with narrow grey margins. Legs: pale orange-brown. Spines typical of the genus. Tml 0.25. Epigynum: Fig. 220; easily distinguishable from those of the other *Diploplecta* species, except for *D.simplex*. Internally (Fig.231) the median part of the duct lacks the spiral configuration, but the lateral part of the duct retains a spiral configuration.

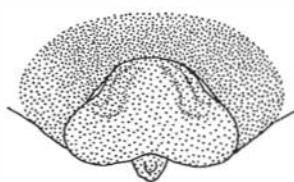
This species can probably be diagnosed by the epigynum, but confirmation should be obtained by clearing the epigynum.

*Type.* Female holotype from Kumeu, Auckland by sweeping pasture 19.i.76 (R.L.Hill); deposited in Entomology Division, DSIR, Auckland.

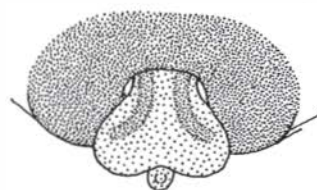
*Records* All these records rank as paratypes. North Island. North Auckland. Near Dargaville, litter 6.i.67, R.R.F. Auckland. Ruawaro, sweeping rye and clover, 19.i.76, R.L.Hill. South Island. Nelson. Pretty Bridge Valley, pitfall in pasture, 16.xi.66, G.Hitchings.



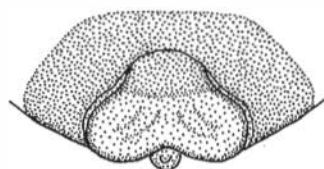
274



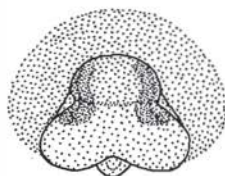
275



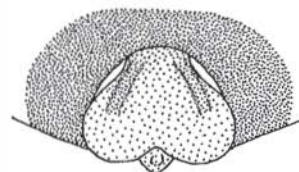
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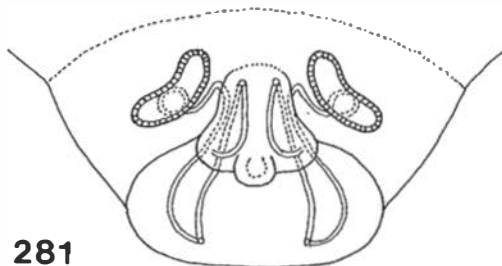
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280



281

Figs. 274-281 Epigyna. 274 *Maorineta tibialis* n.sp. 275 *Maorineta sulcata* n.sp. 276 *Maorineta tumida* n.sp. 277 *Maorineta mollis* n.sp. 278 *Maorineta minor* n.sp. 279 *Maorineta gentilis* n.sp. 280-281 *Maorineta sulcata* n.sp. 280 dorsal, 281 internal genitalia.

### *Maorineta* n.gen.

Type species: *Maorineta tibialis* n.sp.

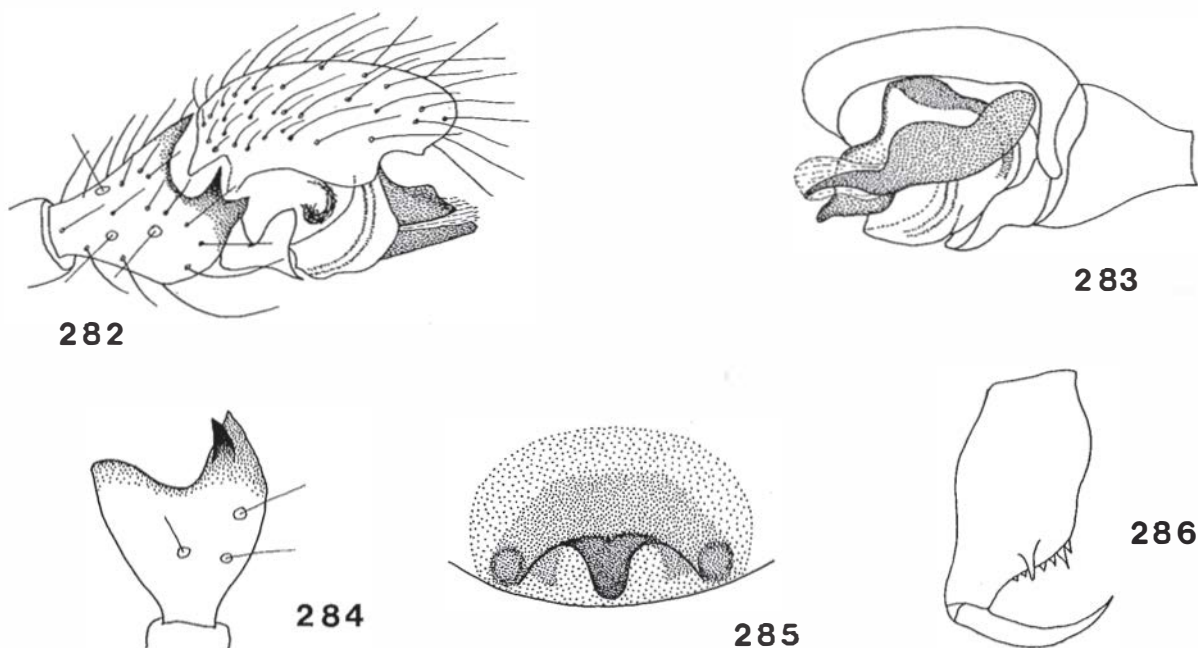
**Etymology:** from Maori, a native of New Zealand, and the Greek *netu* - spun; gender feminine.

This genus comprises small spiders of total length 1.2-2.1 mm. The carapace is unmodified; the chelicerae have a weak lateral file in both sexes. The abdomen is grey to black, with usually a few white markings. The legs are of moderate length, with tibia I l/d ea. 6-10. The femora and metatarsi are spineless. Each tibia has 2 fairly short and slender spines dorsally; lateral spines are absent. Metatarsi I-III have a dorsal trichobothrium, with Tml 0.25-0.35. In some species of the genus, tibia I of the male is fusiform, with a shallow furrow ventrally (Figs. 269-273). The female palp does not have a claw. The members of the genus are haplotracheate. The epigynum (e.g. Figs. 275, 280) has a broad scape derived from the ventral plate. The scape is folded into an S-shaped form, and has a small socket distally; the scape is recessed into a hollow (atrium) which lies between the ventral and dorsal plates. This folded scape is only lightly sclerotised, but is more or less rigid, and is barely expanded by the usual procedures of treatment with 10% caustic soda or hot lactic acid. The genital openings lie in small lateral lobes at the distal end of the scape, and internally the ducts run from these openings along the folded scape to the spermathecae (Fig. 281). The male palpal tibia has a pale brown translucent laminar apophysis extending around the anterior dorsal and ectal margins (e.g. Fig. 242), and a small dark coloured apophysis on the dorso-mesal side anteriorly. The paracymbium has the distal arm laminar and transparent distally, and there is a dark coloured tooth or ridge in the trough between the basal and distal arms. The

suprategular apophysis of the palpal organ is pointed and translucent distally, and carries a small subsidiary apophysis which is slightly hooked and dark in colour (Fig. 28). The embolic division has a similar basic form to that of *Meioneta* Hull; there is a radical section (R) and a well defined lamella (L) (Figs. 243,249), but the region lying between these two sclerites, which comprise the embolus (E) and a broad membraneous sclerite, is often so lightly sclerotised that the detailed structure is difficult to decipher with certainty. The embolic division is similar in all the species, the principal differences being in the form of the lamella.

The structures of the epigynum and of the male palpal organ show that this genus forms part of the Micronetinae (Millidge 1984). The short more or less rigid scape is similar to those of some species currently placed in *Leptyphantes* Menge, but the form of the male palp (in particular, the forms of the tibial apophysis, of the paracymbium and of the embolic division) distinguishes this genus from all others, including *Meioneta*.

The genus *Maorineta* appears to be endemic to New Zealand. The males of the 7 known species can be diagnosed fairly readily by the form of the tibia I, coupled with the form of the palpal lamella. The epigyna of the females are all very similar, which makes diagnosis difficult, and females taken without males cannot always be identified with certainty.



Figs. 282-286 *Ostearius melanopygius* (Cambridge) 282 Palp ectal. 283 Palp mesal. 284 Palp tibia dorsal. 285 Epigynum. 286 Male chelicera anterior.

*Maorineta tibialis* n.sp.

Figs. 240-242, 248, 263, 269, 271, 274

**Measurements** Carapace length: female 0.75-0.80 mm, male 0.70-0.75 mm Total length: female 1.8-2.1 mm, male .65-1.70 mm

**Description** Carapace: brown to deep brown in colour, with blackish fovea. Profile of female Fig. 263. Abdomen grey to black, with usually a small white patch dorsally near the spinners (sometimes absent in the male). Sternum deep brown to black. Legs yellow-brown to orange, often suffused with some black. Tibia I of the male is silvery grey in colour and is swollen in the horizontal plane only, with a shallow furrow ventrally (Figs. 269, 271). Tmi 0.30-0.35. Epigynum, Fig. 274. The scape is somewhat narrower than in the other *Maorineta* species (except *M. tumida*). Palp: Figs. 240-242, 248. The lamella is broad basally, and prominent on the ectal side.

The female can be diagnosed by the epigynum, coupled with the carapace profile (which in most cases distinguishes it from *M. tumida*). The male is diagnosed by the form of tibia I, and by the palpal lamella.

**Type.** Holotype male from Millers Flat, 500m, ex pitfall in tussock X.78 (BIPB); deposited in Otago Museum.

**Records** All these records rank as paratypes. South Island. Otago. Leith Saddle. pitfall, 16.xii.66, C.L.W. Waipori, pitfall, tussock-clover, 13.ii-28.ii.79, B.Barratt. Gorge Creek, pitfall, 6-20.xii.69, C.L.W. Round Hill, near Conical Hill, pitfall, 23.xi-7.xii.69, C.L.W. Pomahaka Bridge, Kelso, pitfall, 23.xii-7.xii.69, C.L.W. Millers flat, 500m, pitfall in tussock, iv.78, B.Barratt. Mossburn, pitfall, 6-20.xii.69, C.L.W. Near Oreti Bridge, pitfall, 6-20.xii.69, C.L.W. Maitland, 23.xi- 7.xii.69, C.L.W. Waikaka, pitfall, 23.xi-23.xii.69, C.L.W. Top Hill, 5 miles from Lawrence, pitfall, 2.i.70, C.L.W. Taumutu, Papatowai, 11.i.61, R.R.F. The Wilderness, pitfall, 6-13.xii.69, C.L.W.

*Maorineta sulcata* n.sp.

Figs. 243-245, 264, 270, 273, 275, 280, 281

**Measurements** Carapace length: female 0.8 mm, male 0.7-0.8 mm Total length: female 1.9-2.1 mm male 1.55-1.8 mm

**Description** Carapace orange to brown in colour, suffused to a variable degree with black. Profile of female Fig. 264. Abdomen grey to black, with usually a small white patch dorsally just anterior to the spinners. Sternum orange, heavily suffused with black. Legs: orange, sometimes suffused with brown. Tibia I of the male is orange in colour, and fusiform, with a shallow furrow ventrally (Figs. 270, 273). Tmi 0.25-0.33. Epigynum. Figs. 275, 280, 281; this is probably not distinguishable with certainty from the epigyna of *M. mollis* and *M. gentilis*. Palp Figs. 243-245, the lamella has 2 branches: the lower one is very short, while the upper, principal, branch is serrated distally (when viewed mesally).

The female can probably be diagnosed by the form of the epigynum coupled with the carapace profile. The male can be diagnosed by the form of Tibia I, coupled with the form of the lamella.

**Type.** Holotype male from Wairarapa, Te Wharau School, ex pitfall, 5-13.ix.70, (C.L.Wilton); deposited in Otago Museum.

**Records** All these records rank as paratypes. North Island. Kaimanawa Range, 975m, litter *Nothofagus fusca* and *Weinmannia racemosa* 29.iii.75, B.M.May. Hawkes Bay. Te Awanga, on beach 28.xii.47, R.R.F. Wairarapa., Saddle Mt. Bruce Watershed, pitfall, 1-6.x.69 C.L.W. Corner Paierau Rd. and Highway 2, pitfall, 1-8.x.69, C.L.W. 3 miles south Eketahuna, pitfall, 1-8.x.69, C.L.W. Motupiko, 12.ii.69, C.L.W. Mangareia, in short grass and moss, C.L.W. Nelson. Pretty Bridge, pitfall, 19.x.66, G.Hutchings. Otago. Corner Puketiro and Flat Point Roads, pitfall, 13-14.v.70, C.L.W.



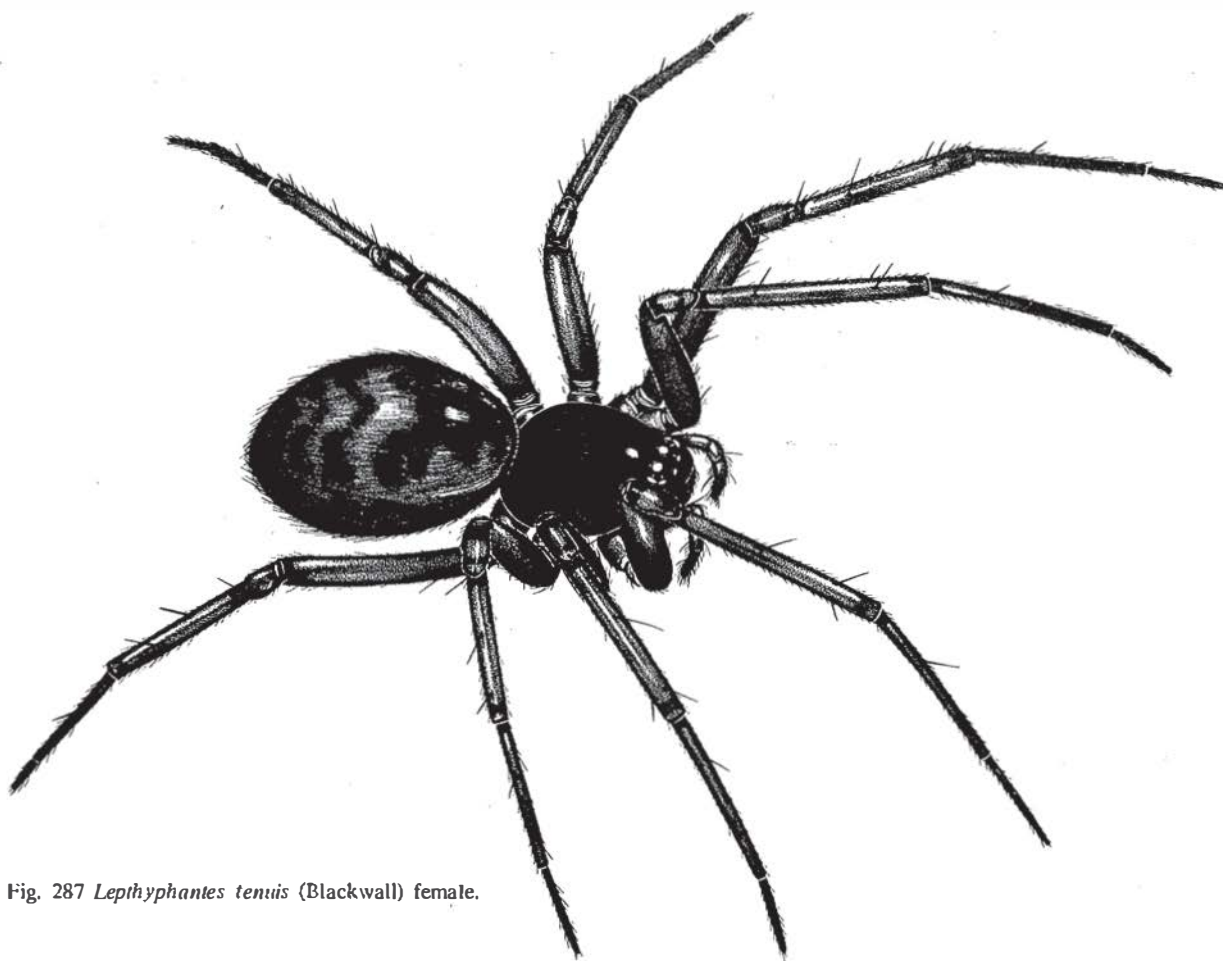


Fig. 287 *Lepthyphantes tenuis* (Blackwall) female.

***Maorineta tumida* n.sp.**

Figs. 246, 247, 265, 272, 276

**Measurements** Carapace length: female 0.65-0.73 mm, male 0.65 mm Total length: female 1.50-1.65 mm, male 1.50-1.55 mm

**Description** Carapace usually yellow-brown to brown in colour, with blackish striae and margins, but occasionally completely dark brown. Carapace profile of female Fig. 265. Abdomen black, with only occasionally a small white patch dorsally near the spinners. Sternum yellow-brown, suffused with black, to almost completely black. Legs yellow-brown. Tibia I of the male is fusiform (Fig. 272), with a shallow furrow ventrally. Tml 0.30-0.33. Epigynum: Fig. 276; the scape is narrower than in the other *Maorineta* species, apart from *M.tibialis*. Palp Figs.246, 247; the lamella, viewed ectally, is narrow.

The female can be diagnosed by the epigynum, coupled with the carapace profile, though this may not be completely reliable. The male is diagnosed by the form of tibia I, coupled with the forms of the lamella and of the tibial apophysis.

**Type.** Holotype male from Otago, East Br., Ewe Burn, ex pitfall, 29.viii.68 (C.L.Wilton); deposited in Otago Museum.

**Records** All these records rank as paratypes. South Island. Nelson. Mount Domett 1250m, 1.xii.71, G.Kuschel. Marlborough. French Pass Road, Ohuri Bay, 1200 ft., moss on bank, 27.viii.65, L.P.Marchant. Westland. 7 miles west of Haast Pass, 21.i.60, R.E.Leech. Canterbury. Ashley River, pitfall, 15-25.iii.69, R.R.F., C.L.W. Flock Hill Station, 29.ix.66, R.R.F., C.L.W. Otago. East Branch, Eweburn, pitfall, 12.x.68, C.L.W. Corner Little Kyeburn, Naseby-Danseys Pass Road, pitfall, 12.ix.68, C.L.W. Maniototo Station Road, pitfall, 16.ii.69, C.L.W. Spec Creek, Kyeburn, pitfall, 9.ii.68, C.L.W. Alexandra, Old Stone Hut, in tussock, iv.77, A.C.Harris. Middelmarsh, 10.iv.71, T.R.Beatson.

***Maorineta mollis* n.sp.**

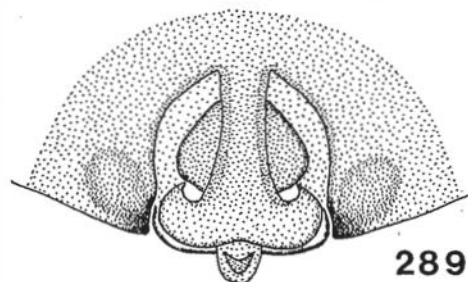
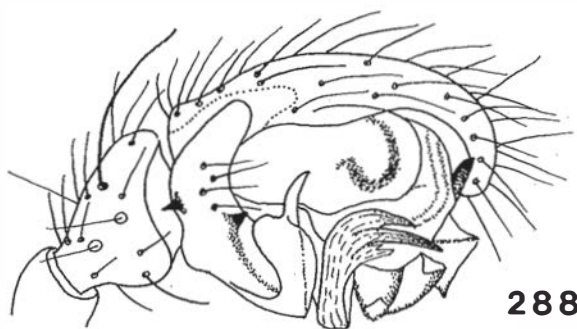
Figs. 249, 252, 253, 257-259, 268, 277

**Measurements** Carapace length: female, 0.62-0.90 mm, male 0.60-0.90 mm Total length: female 1.55-1.80 mm, male 1.35-1.80 mm

**Description** Carapace yellow-brown, brown or orange in colour, with dusky or blackish markings and margins; profile Fig. 268. Abdomen grey to black in colour, with often (but not always) a small white patch dorsally near the spinners. Sternum orange-yellow to dark brown, sometimes suffused with grey. Legs yellow to orange-brown in colour. Tml 0.25-0.35. Epigynum Fig. 277; this is very similar to those of *M.sulcata* and *M.gentilis*. Palp Figs. 249, 252, 253, 257-259; the cymbium is often suffused with black. The embolic division is more or less identical with that of *M.tibialis*. This species shows a good deal of variation in size and colour, with the larger specimens darker in colour and with a longer dorso-mesal tibial apophysis (Fig. 253,258). It is possible that *mollis* is a composite of 2 species; the type species is the smaller form, with the palp shown in Figs. 257, 259. The female can be diagnosed, though with some uncertainty, by the epigynum. The male is diagnosed by the non-fusiform tibia I, coupled with the form of the tibial apophysis and palpal lamella.

**Type.** Holotype male, South Island, Parkes Farm, 88-Valley, Nelson, 20.vi.72 (N.A. Martin); deposited in Entomology Division, DSIR, Auckland.

**Records** All these records rank as paratypes. North Island. Auckland. Lynfield, Tropicana Drive, 27.vii.74, G.Kuschel. Wairarapa. Te Wharau, litter, beech forest, 13.ix.70, C.L.W. Te Wharau, pitfall, 5-13.viii.70, C.L.W. Mangareia, 12.ix.47, C.L.W. South Island. Nelson. Whangamoa Saddle, 1170 ft., lichens, 12.viii.65, A.K.Walker. Lockstone, Mount Arthur, 1448m, 24.iii.71, J.McBurney. Onekaha, Golden Bay. 300m, leaf litter, 24.v.59, L.Coughly. Marlborough. Black Birch



Figs. 288, 289 *Leptyphantus tenuis* (Blackwall). 288 Palp ectal. 289 Epigynum.

Experimental Station, 4,600 ft., from herbage mats, 20.ii.70, G.Kuschel. Canterbury. Pigeon Bay, 1.v.52, J.S.Dugdale. Alford Forest, Stavelly, moss, 14.vii.66, A.D.Lowe. New Brighton, pine and grass litter, 13.vi.74, A.D.Blest. Otago. Rocklands, 800m, pitfall in tussock, 24.x.-7.xi.78, B. Barratt. Summit, Taieri Ridge, pitfall, 29.viii.68, C.L.W. North of Tiroti, pitfall, 29.viii.68, C.L.W. Mossburn, pitfall, 6-20.xii.69, C.L.W. Flagstaff, pitfall, 27.xii.-3.i.71, C.L.W. Maniototo Road near Allison Lane, pitfall, 15.viii.68, C.L.W. Rock and Pillar Range, 4,500ft., pitfall, 6-13.xii.69 J.Child. Southland. The Wilderness, pitfall, 6-13.xii.69, C.L.W. Oreti River Bridge, Lumsden-Te Anau Road, pitfall, 6-20.xii.69, C.L.W. Te Anau Downs, 17.i.75, R.R.F.

***Maorineta minor* n.sp.**

Figs. 254, 260, 266, 278

**Measurements** Carapace length: female 0.55-0.65 mm, male 0.60-0.65 mm Total length: female 1.25-1.55 mm, male 1.2-1.55 mm

**Description** Carapace yellow to pale brown in colour, with dusky markings and margins. Profile of female Fig. 266. Abdomen pale grey to grey, with ventrally a broken white stripe which broadens posteriorly; this stripe is absent in very pale specimens. Sternum pale orange, suffused to a variable extent with black. Legs pale yellow to orange. Tml 0.30-0.33. Epigynum: Fig. 278. Palp Figs. 254, 260; the lamella is prominent on the ectal side, and the tibial apophysis is characteristic.

The female can usually be diagnosed by the epigynum and the small size of the species. The male is diagnosed by the non-fusiform tibia I, coupled with the forms of the palpal lamella and of the tibial apophysis.

**Type.** Holotype male North Island. Auckland. Lynfield, Tropicana Av. 4.xii.74 (G. Kuschel); deposited in Entomology Division, DSIR, Auckland.

**Records** All these records rank as paratypes. Three Kings Islands. Beacon Knob 260m, litter, 23.xi.70, G.Kuschel. Landing beach, litter 26.xi.70, G.Kuschel. North Island. North Auckland. Okahu, moss mixed scrub, 30.vi.65, M.Luxton. Waipoua forest, leaf litter, 19.i.67, R.Rowe. Paihia, leaf litter and moss, 31.viii.42, K.Lamb. Three miles south Paihia, rimu litter, 18.xii.66, K.A.J.Wise. Motuihi Island, under debris in sand, 24.i.66, K.A.J.Wise. Little Barrier Island, summit track, 500ft., in kanuka-kauri litter 24.i.66, K.A.J.Wise. Wellington. Tararua Range, 4616ft., under stone, 6.xii.52, B.A.Holloway. Stoke Valley) moss, 10.viii.52, B.A.Holloway.

***Maorineta gentilis* n.sp.**

Figs. 250, 255, 261, 267, 279

**Measurements** Carapace length: female 0.80-0.85 mm, male 0.80-0.90 mm Total length: female 1.8-2.1 mm, male 1.8-2.0 mm

**Description** Carapace pale brown to brown in colour, with dusky markings and margins. Profile of female Fig. 267.

Abdomen grey to black, with sometimes a small white or grey spot dorsally just in front of the spinners. Sternum orange, heavily suffused with black. Legs: orange. Tml 0.28-0.33. Epigynum Fig. 279; this is very similar to those of *M.mollis* and *M.sulcata*. Palp Figs. 250, 255, 261 the lamella has 2 branches, the lower one quite short. The female can be diagnosed, though probably not with complete certainty, by the epigynum coupled with the carapace profile. The male is diagnosed by the non-fusiform tibia I, coupled with the forms of the palpal lamella and of the tibial apophysis.

**Type.** Holotype male South Island. Nelson, Mangles River Br., Murchison, ex pitfall, 12.ii.69 (C.L. Wilton); deposited in Otago Museum.

**Records** All these records rank as paratypes. South Island. Westland. Open Bay Island, Taumaka, 18.i.71, M.F. Miller. Murchison, near Matakita Bridge, 10.ii.69, C.L.W. Lewis Pass, pitfall, 10-13.xii.71, C.L.W. Nelson. Parkes Farm, 88 Valley, 8.vi.71, W.A. Martin.

***Maorineta acerba* n.sp.**

Figs. 251, 256, 262

**Measurements** Carapace length: male 0.70-0.75 mm Total length: male 1.50-1.65 mm

**Description** Only the male is known. Carapace brown in colour, with dusky markings and margins; the ocular area is suffused with black. Abdomen black, with sometimes a white patch dorsally near the spinners. Sternum orange, heavily suffused with black. Legs orange, suffused with grey. Tml 0.32, Palp: Figs. 251, 256, 262; the lamella has 2 branches, and is fairly close to that of *M.gentilis*.

The male is diagnosed by the non-fusiform tibia I, coupled with the forms of the palpal lamella and the tibial apophysis.

**Type.** Holotype male from Cascade Creek, Fiordland, 17.i.75, R.R. Forster deposited in Otago Museum.

**Records** Otago. Corner Puketiro and Flat Point Roads, pitfall, 13-14.v.70, C.L.W. (paratypes).

***Ostearius* Hull**

*Ostearius* J.E. Hull 1911: Trans. Nat. Hist. Soc. Northumb. (N.S.) 3(3):583; Locket and Millidge 1953: British Spiders 2:325.

Type species: *Tmetiscus nigricauda* O.F.-Cambridge 1907 = *Linyphia melanopygia* O.P.-Cambridge 1879.

This genus contains a single species, *Ostearius melanopygius*, a small spider of total length 2.0-2.55 mm. The carapace is unmodified in both sexes. The chelicerae have a weak lateral file; in the male, there is a pointed tubercle anteriorly (Fig. 286). The abdomen is usually red or pink in colour, with a black area posteriorly around the spinners; occasionally the abdomen can be completely black. The legs are of medium length. The femora and metatarsi are spineless; each tibia has 2 spines dorsally, but no lateral or ventral spines. Metatarsi I-III have a trichobothrium, with Tml ca.



0.45. The female palpal tarsus is clawless. The genus is haplotracheate. The epigynum has the ventral plate produced posteriorly into a short scape; the genital openings lie on the caudal surface of the epigynum, adjacent to the dorsal plate, and the ducts do not run along the scape. The palpal tibia has an apophysis anterio-laterally (Fig.284), and the embolic division of the palpal organ is simple (Fig. 283).

The epigynal form places this genus in the *Stemonyphantes* group (Millidge, 1984). The single species of the genus is widely distributed throughout the world.

### *Ostearius melanopygius* (O.P.-Cambridge)

Figs. 282-286

*Linyphia melanopygia* O.P.-Cambridge 1879: Proc.Zool.Soc.Lond. 1879: 53.  
*Erigone atriventer* Urquhart 1887; Trans.N.E.Inst.19:102, female type examined – new synonym.  
*Ostearius melanopygius*: Locket and Millidge 1953: British Spiders- 2:326; Kaston 1981: Spiders of Connecticut:901.

**Measurements** Carapace length: female 1.0-1.1 mm, male 0.9-1.1mm Total length: female 2.0-2.55 mm, male 1.9-2.2 mm  
**Description** Carapace brown, with faint dusky markings, and sometimes black margins. Chelicerae in the male with a strong pointed tooth anteriorly (Fig. 286). Abdomen pink or red in colour, but black around the spinners; the pink or red colour bleaches in alcohol, to become grey. Occasionally the abdomen is completely black, though this has not been the case with any of the N.Z. specimens seen. Sternum brown to orange-brown, often suffused with black. Legs yellow-brown to orange-brown. Spines and trichobothria as in the generic description. Epigynum Fig. 285. Palp Figs. 282-284.

The female is diagnosed by the epigynum (Fig. 285), the male by the palp and the chelicerae; in freshly caught specimens, both sexes can be diagnosed by the colour.

**Type** Holotype male, "from New Zealand", in the Hope Department, Oxford, England. Type of *Erigone atriventer* Urquhart in *Canterbury Museum – seen*.

**Records** North Island. Auckland. Green Bay, in debris, 17.ix.69, J.C.Watt. Kumeu, in poultry manure, 21.vi.75, J.C. Watt. Hawkes Bay. Twyford, in poultry manure, 21.xi.76, B.A.Holloway. Taranaki. Oakura Beach, 26.iii.68, R.R.F. Mount Messenger, litter, 21.vi.65, A.K.Walker. Wellington. Waitere Beach, Levin, 23.iii.69, C.L.W. Station, 17.ix.69, J.C.Watt, Wairarapa. Masterton, xi.57, C.L.W. South Island. Otago. Taieri, leaf litter, 25.i.51, R.R.F. Wanaka, i.54, B.J.Marples.

## INTRODUCED SPECIES

### *Lepthyphantes tenuis* (Blackwall)

Figs. 287-289

*Linyphia tenuis* Blackwall 1852: Ann.Mag.Nat.Hist.(2)9:18.  
*Lepthyphantes tenuis*; Locket and Millidge 1953: British Spiders II:385; Wiehle 1956: Tierw. Deutschl. Spinnentiere X. Linyphiidae: 197; van Helsdingen, Thaler and Deltchev 1977: Tidsschr.entoml. 120:17.

**Measurements** Carapace length: female ca. 1.0 mm, male 0.80-0.90 mm Total length: female ca. 2.50 mm, male 1.9-2.2 mm

**Description** Carapace yellow-brown, with dusky markings and margins: the ocular area is sometimes suffused with black. Abdomen dorsally grey, with white blotches, and black bars and chevrons the sides are black, and the ventral surface grey to black. The colour and pattern are somewhat variable. Sternum yellow to brown, suffused with some black. Legs long, yellow to brown in colour. The femora have one prolateral spine, the metatarsi have one dorsal spine. The dorsal tibial spines are 2222 in both sexes, tibiae I-II have an

additional retrolateral spine, and tibia I also has one prolateral spine. All the spines are long and strong. Metatarsi I-III have a trichobothrium, with TmI ca. 0.2. Epigynum, Fig. 289; a scape, folded into an S-form, arises from the ventral plate. Palp Fig. 288, the form of the lamella, and the position of the 2 teeth on the paracymbium, are characteristic of this species.

As a member of the New Zealand fauna, this species is readily diagnosed by the epigynum and the palp.

**Type:** described by Blackwall on specimens from England.

**Records** Large numbers of specimens examined from all parts of New Zealand. The species is particularly common in the South Island in pasture and grassland, but also occurs in disturbed native forest and pine plantations.

### *Diplocephalus cristatus* (Blackwall)

Figs. 290-292, 296, 299, 307

*Walckenaera cristata* Blackwall 1833: Phil.Mag.(3);3:107.

*Diplocephalus cristatus*: Locket and Millidge 1953: British Spiders II:291; Wiehle 1960: Tierw. Deutschl. spinnentiere XI. Micryphantidae; 501.

**Measurements** Carapace length: female 0.90-0.95 mm, male ca. 1.0 mm. Total length: female 2.0-2.2 mm, male 1.8-2.0 mm

**Description** Carapace brown to chestnut brown in colour, with faint darker striae and margins. The male carapace is raised anteriorly and divided by a shallow transverse groove (Fig. 292, 307); female carapace profile Fig. 299. Abdomen grey to black. Sternum: orange-brown to deep brown, suffused with black. Legs brown to orange-brown. The femora and metatarsi are spineless; the tibial spines are 2211 in the female, but in the male the spines on Legs I-II are reduced or absent. Metatarsi I-III have a trichobothrium, with TmI ca. 0.50. Epigynum Fig. 296;I the ventral plate is split longitudinally into 2 parts. Palp Figs. 290, 291.

As part of the New Zealand fauna, this species is diagnosed in the female by the epigynum (which is, however, of similar form to that of *Araeoncus humilis*) and by the carapace profile, and in the male by the palp and the form of the carapace.

**Type:** described by Blackwall on specimens from England.

**Records** Abundant in all parts of New Zealand, particularly in pasture and other grassland habitats. Often recorded from high altitudes in herbfield and tussock above the bushline.

### *Araeoncus humilis* (Blackwall)

Figs. 293-295, 297, 298, 300, 306

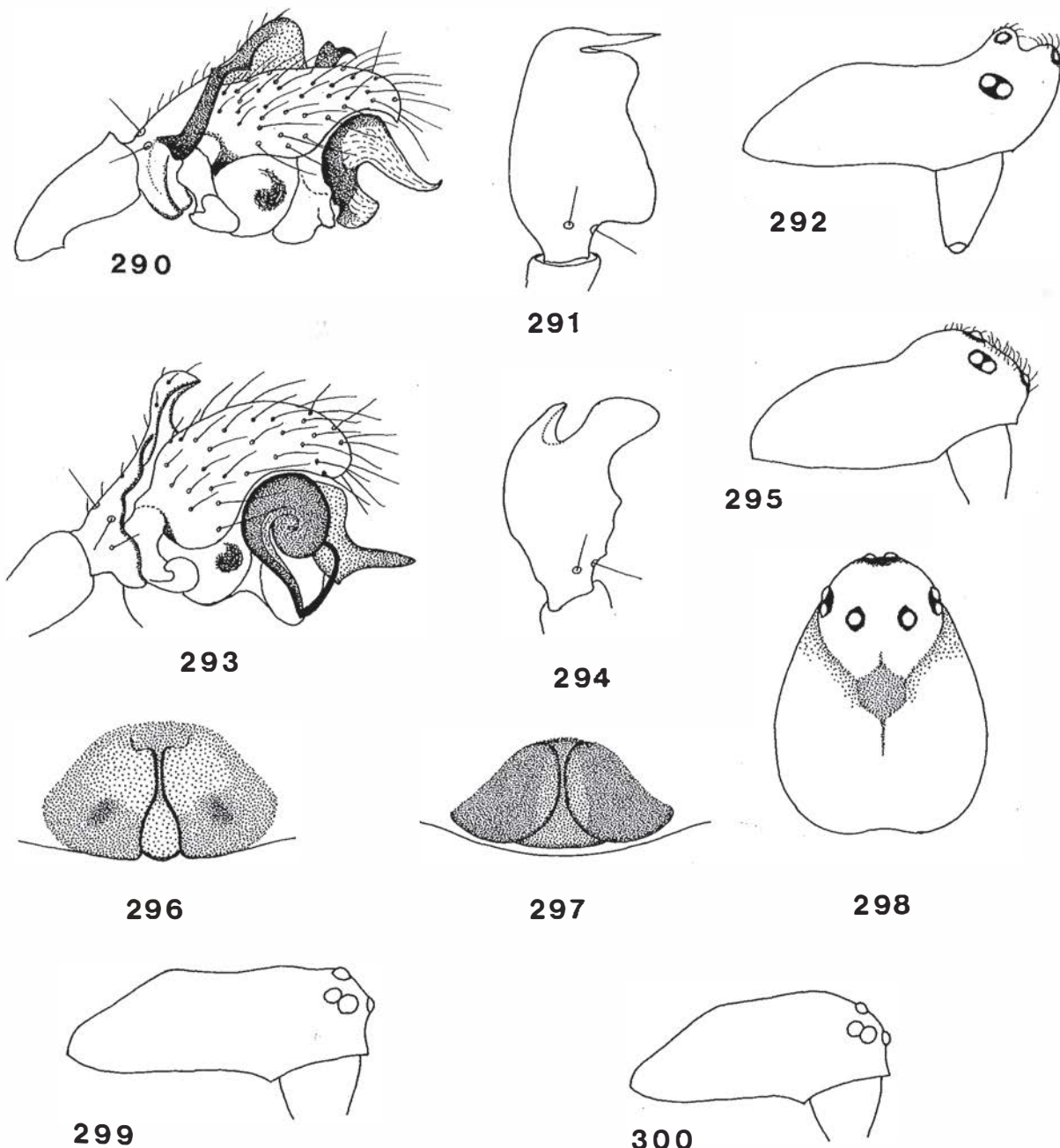
*Walckenaera humilis* Blackwall. 1841:TransLinn.Soc. Lond.- 18:636

*Araeoncus humilis*: Locket and Millidge 1953: British Spiders II: 298; Wiehle 1960: Tierw. Deutschl. Spinnentiere XI. Micryphantidae: 235.

**Measurements** Carapace length: female 0.62-0.70 mm, male 0.70-0.75 mm total length: female 1.45-1.80 mm, male.45-1.55 mm

**Description** Carapace orange-brown to deep brown, with blackish markings and margins. The male carapace is smoothly raised anteriorly (Figs. 295,306), with numerous short hairs in the ocular area; the posterior median eyes of the male are widely separated (Fig. 298). Female carapace profile Fig. 300. Abdomen grey to black. Sternum brown, heavily suffused with black; sometimes almost completely black. Legs. orange-brown, suffused with grey on the patellae and tibiae. The femora and metatarsi are spineless. The tibial spines in the female are 2211, but short and slender; in the male the spines are 0011, very short and weak. Metatarsi I-III have trichobothrium; TmI 0.40-0.45. Epigynum: Fig. 297; the ventral plate is split into 2 sections, as in *Diplocephalus cristatus*. When the epigynal integument is only lightly pigmented, the outlines of the spermathecae are visible. Palp: Figs. 293, 294.





Figs. 290-292, 296, 299, *Diplocephalus cristatus* (Blackwall). 290 Palp ectal. 291 Palpal tibia dorsal. 292 Male carapace lateral. 296 Epigynum. 299 Female carapace lateral. Figs. 293-295, 297, 298, 300 *Araeoncus humilis* (Blackwall). 293 Palp ectal. 294 Palp tibia dorsal. 295 Male carapace lateral. 297 Epigynum. 298 Male carapace dorsal. 300 Female carapace lateral.

As part of the New Zealand fauna, this species is diagnosed in the female by the epigynum, and by the carapace profile (Fig. 300). The male is diagnosed by the palp and the form of the carapace.

*Type:* described by Blackwall on specimens from England.

*Records* South Island. Canterbury. Cheviot, pitfall, 15-25.iii.69, C.L.W. Christchurch Airport, pitfall in pasture, 10.vi.69, A.Moed. Otago. Mossburn, pitfall, 6-20.x.69, C.L.W. Taieri Bridge, Maniototo, pitfall, 27.i.69, C.L.W. Naseby forest, pitfall, 4.xi.67, C.L.W. Macraes Flat, pitfall, 29.viii.68, C.L.W. Fillyburn Bridge, 20.iii.69, C.L.W. Spec Creek, Kyeburn, pitfall, 12.xii.68, C.L.W. North of Tirotiti, pitfall, 25.x.67, C.L.W. Kelso, pitfall, 23.xi.-7.xii.69, C.L.W. Wedderburn, pitfall, 27.i.69, C.L.W. Kokonga, pitfall, 27.xi.67, C.L.W. Patearoa, pitfall, 25.x.67, C.L.W. East Branch, Ewe Burn, pitfall, 11-25. xi.67, C.L.W. Deep Dell, pitfall, 26.xii.68, C.L.W. Corner Little Kyeburn and Naseby Road pitfall, 16.ii.69, C.L.W. Mount Swinburn, pitfall,

24.iii.69 C.L.W. Dry Ridge Road, Middlemarch, pitfall, 12.iv.71, T.R.Beatson. Near Waipiata, pitfall, 16.xi.67, C.L.W. Coronet Peak, Queenstown, moss and lichen on rocks, 6.xii.66, A.K.Walker. Southland. Maitland, pitfall, 23.xi.-7.xii.67, C.L.W.

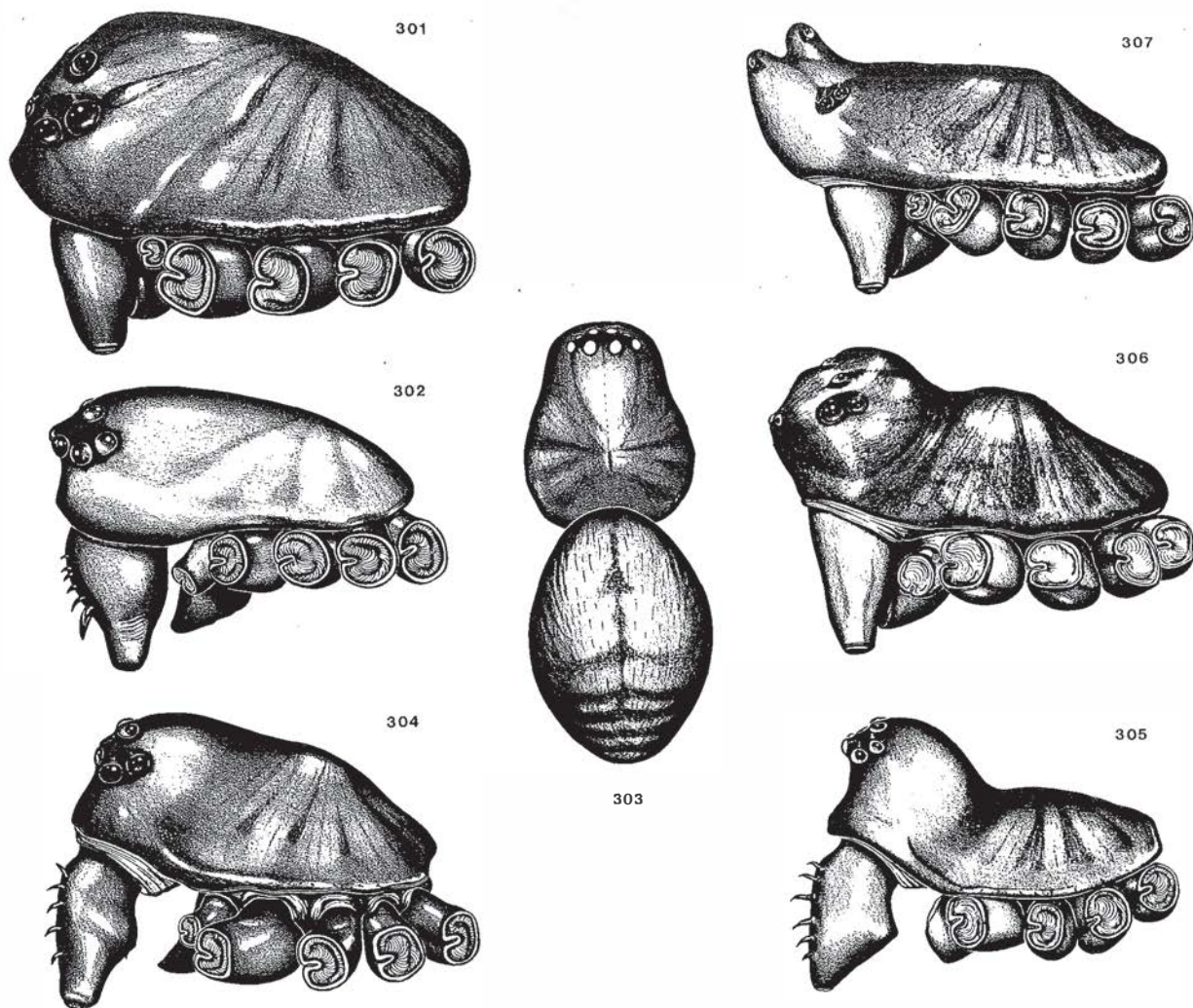
### *Microctenonyx subitaneus* (O.P.-Cambridge)

Figs. 301, 308-311.

*Erigone subitanea* O.P.-Cambridge 1875: Ann.Mag.Nat.Hist. (4)16:249.

*Aulacocyba subitanea*: Locket and Millidge 1953: British Spiders II: 270; Wiehle 1960: Tierw. Deutschl. Spinnentiere XI. Micryphantidae: 270; Kaston 1981: Spiders of Connecticut: 175, 904.

*Microctenonyx subitaneus*: Bonnet 1957: Bibliog.Aran.11(3): 2882.



Figs. 301-307 Carapace and body of males. 301 *Microctenonyx subitaneus* (Cambridge). 302,303 *Eperigone fradeorum* (Berland) . 305 *Erigone prominens* (Bösenberg and Strand). 304 *Erigone wiltoni* Locket. 306 *Araeoncus humilis* (Blackwall). 307 *Diplocephalus cristatus* (Blackwall).

**Measurements** Carapace length: female 0.65-0.75 mm, male 0.60-0.65 mm Total length: female 1.35-1.60 mm, male 1.2-1.35 mm

**Description** Carapace yellow-brown to orange brown, with faint darker markings and margins. Male with sulci behind the posterior lateral eyes (Figs. 301,309). Abdomen pale grey to grey-black. Sternum: yellow to orange, with often blackish margins. Lcgs short and stout, pale yellow to orange-brown in colour. The femora and metatarsi are spineless. The tibial spines are 1111 in both sexes, but short and weak. Metatarsi I-III with a trichobothrium; Tml ca. 0.45. Epigynum Fig. 311; the shape of the posterior area (which is part of the dorsal plate) lying between the dark lines is somewhat variable, and in some specimens which are darker in colour the outlines of the spermathecae are less clear. Palp Figs. 308, 310. This species is easily diagnosed by its small size, pale colour, and genitalia.

**Type:** Described by Pickard-Cambridge on a specimen from England.

**Records** North Island. Wairarapa. Masterton. pitfall, xi.57, C.L.W. South Island. Marlborough. Weld Pass, pitfall, 16-25.iii.69, C.L.W. Canterbury. Ashley River, pitfall, 13-25.iii.69, C.L.W. Harewood, 3.i.60, R.E.Lecch. Christchurch Airport, pitfall in pasture, 25.iii.69, A.Moed. South Brighton, pine and marram litter, 13.vi.74, A.D.Blest. Otago. Patcaroa, pitfall, 1.iii.68, C.L.W. Kokonga, pitfall, 15.v.69, C.L.W. East Branch. Fwe Burn, pitfall, 26.ix.68,

C.L.W. North of Tiroiti pitfall, 15.v.64, C.L.W. Near Waipiata, pitfall, 27.i.68, C.L.W. pitfall, 1.iii.68, C.L.W. Taieri Bridge, Maniototo, pitfall, 15.v.69, C.L.W. River flat near Middelmarsh, pitfall, 12.iv.71, C.L.W. Macraes Flat, pitfall, 15.xi.67, C.L.W. Wedderburn, pitfall, 15.xi.67, C.L.W. Near Patearoa, pitfall 24.iii.68, C.L.W. Naseby Forest, pitfall, 16.xii.67, C.L.W. Cromwell Gorge, 21.xi.74, J.C.Watt. Deep Dell, pitfall, 15.xi.67, C.L.W. Fillyburn Bridge, pitfall, 14.x.67, C.L.W. Millers Flat, 500 m, pitfall in tussock, x.78, B.Barratt. Horse Range, 18.xii.65, C.L.W.

#### *Lessertia denticelis* (Simon)

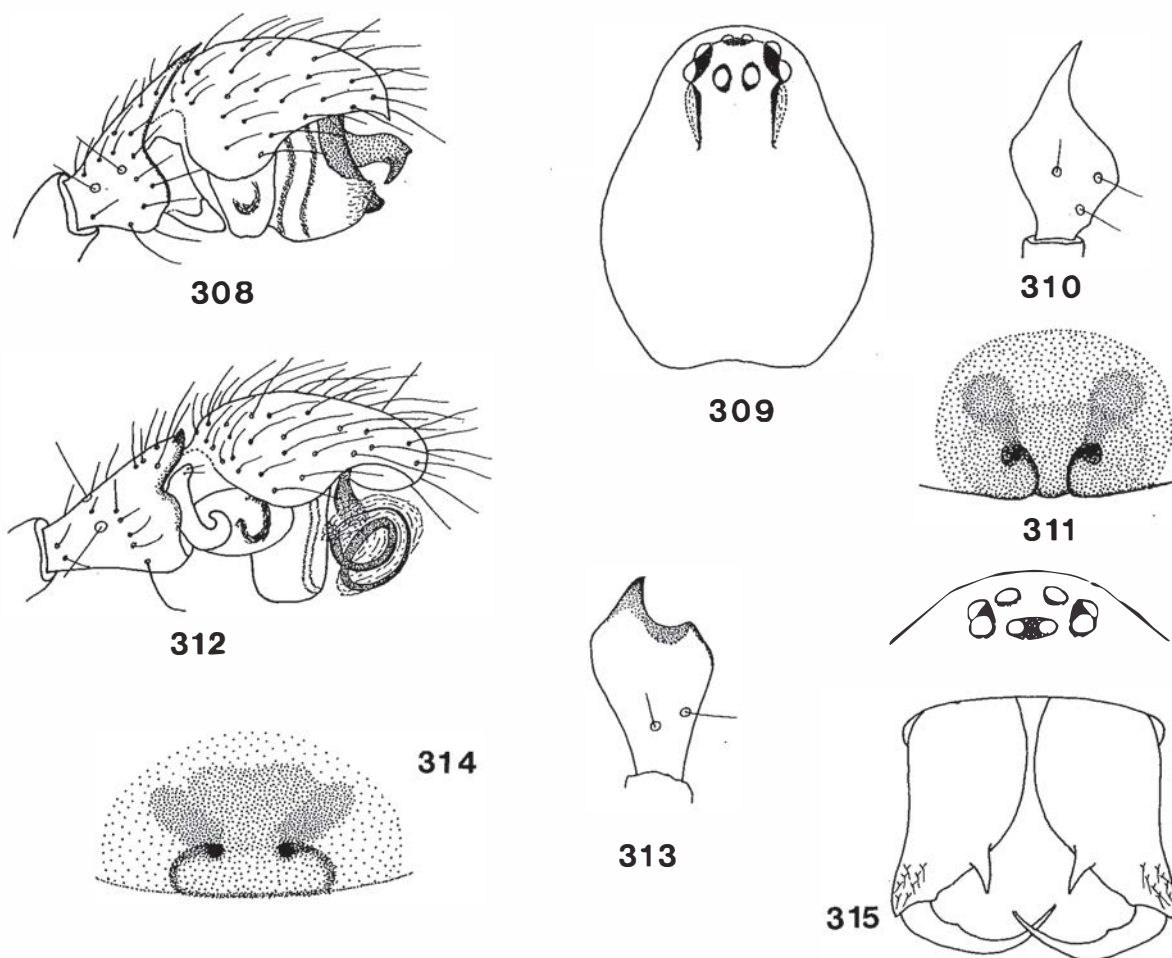
Figs. 312-315.

*Tmeticus denticelis* Simon 1884:Arach.de France 5(2):390  
*Lessertia denticelis*: Locket and Millidge 1953: British Spiders 2: 300; Wiehle 1960: Tierw. Deutschl. Spinnentiere XI. Micryphantidae: 180.

**Measurements** Carapace length: female 1.3-1.45 mm, male 1.3-1.4 mm total length: female 2.75-3.5 mm, male 2.75-3.5 mm

**Description** Carapace pale brown to orange. Chelicera with male a prominent pointed tooth anteriorly (Fig. 315). Abdomen, grey. Sternum pale yellow to orange. Legs pale yellow to orange-brown. The femora and metatarsi are spineless the tibial spines are 2221 in both sexes. Metatarsi I-III have a





Figs. 308-311 *Microctenonyx subitaneus* (Cambridge). 308 Palp ectal. 309 Male carapace dorsal. 310 Palpal tibia dorsal. 311 Epigynum. Figs. 312-315 *Lessertia denticheles* (Simon). 312 Palp ectal. 313 Palpal tibia dorsal. 314 Epigynum. 315 Male chelicerae anterior.

trichobothrium, with TmI ca. 0.35. Epigynum Fig. 314. Palp Figs. 312, 313.

This species is readily diagnosed in the female by the epigynum, and in the male by the palp and the chelicerae. *Type*: Described by Simon on specimens from the south of France. *Records* New Zealand from a single female from Mohikinui River, Westland, 20.v.56 (L.R.Jackson).

#### *Erigone wiltoni* Locket

Figs. 304, 318, 319, 322, 323, 325-327, 329, 330

*Erigone wiltoni* Locket 1973: Bull. Br. Arachnol. Soc. 2(8):162.

*Measurements* Carapace length: female 0.75-0.85 mm, male 0.65-0.80 mm Total length: female 1.8-2.1 mm, male 1.4-2.0 mm

*Description* Carapace orange-brown to deep chestnut brown. Carapace profiles Figs. 304, 325, 326, 329. Chelicerae in the male there is a row of 4 or 5 (occasionally 6) curved, pointed teeth on the antero-lateral face (Fig. 325). In some males, however and particularly in smaller specimens, the anterior teeth are reduced in size or may even be absent; within a single population there can sometimes be specimens with 4, 5 or 6 teeth of varying size. The female chelicerae occasionally (particularly in larger specimens) have a row of tiny denticles antero-laterally. Abdomen, grey to black. Sternum orange, suffused with some grey. Legs: brown to orange-brown. The femora and metatarsi are spineless; the tibial spines, which are slender and fairly short, are 22/1 in both sexes. Metatarsi I-III have a trichobothrium, with TmI 0.45-0.50 in both sexes. Epigynum Figs. 327, 330. Palp Figs. 318, 319. There are usually small denticles on the femora and on the mandibles.

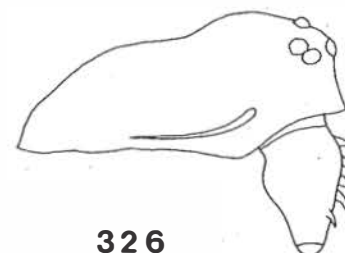
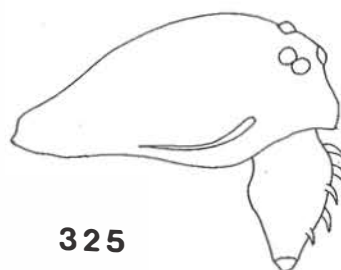
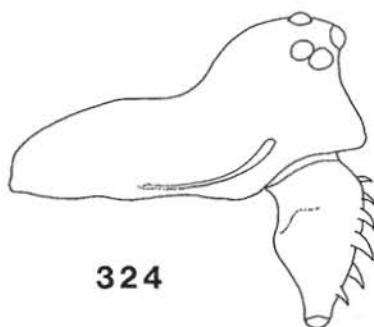
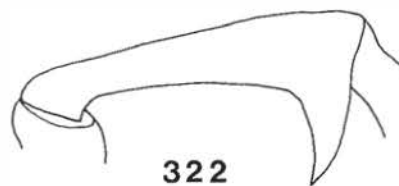
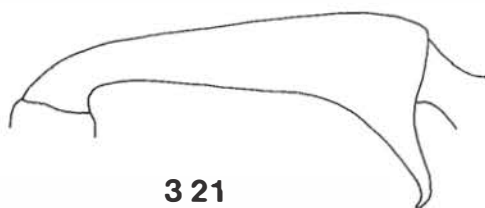
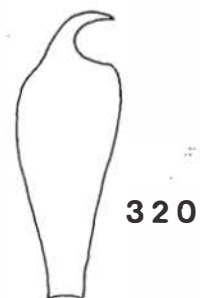
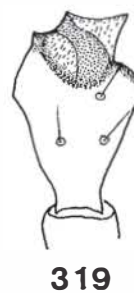
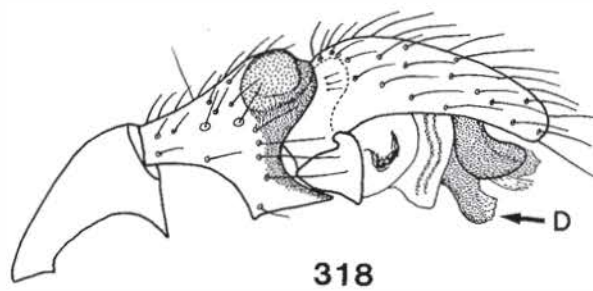
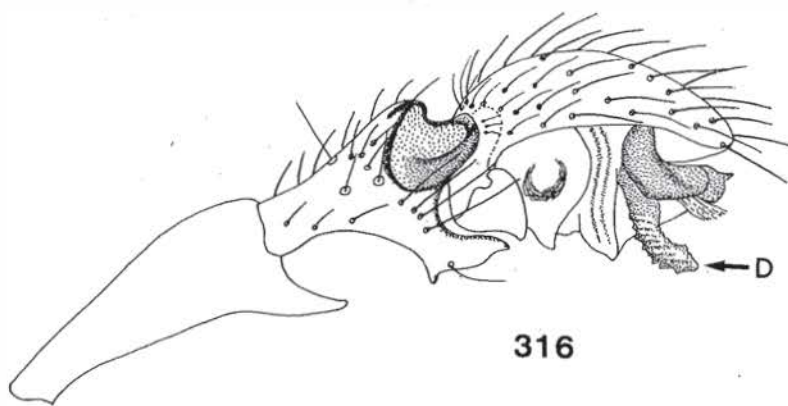
Some specimens have the femur, and particularly the patella, lengthened (Fig. 322). Some small males, on the contrary, have the femur and patella very short (Fig. 323), with no denticles on the femur; these specimens, in which the palpal organ appears to be typical, also lack the anterior cheliceral teeth. Specimens of varying patellar length can be found within one small population.

The female can be diagnosed by the epigynum, which is very similar however to that of *E. prominens*; the dimple at the posterior of the epigynal plate is slightly different in form in the two species. When cleared, the epigyna of the two species are easily distinguishable. The carapace profiles will also usually distinguish *E. wiltoni* from *E. prominens*. The male is diagnosed by the palp, which is readily distinguished from that of *E. prominens* by the form of the patellar apophysis, of the tibial apophysis and of the "dens" of the embolic division (d, Figs. 316, 318); the variability of the length of the palpal femur, etc., must be borne in mind. The males of *E. wiltoni* and *E. prominens* can also be separated by the carapace profiles.

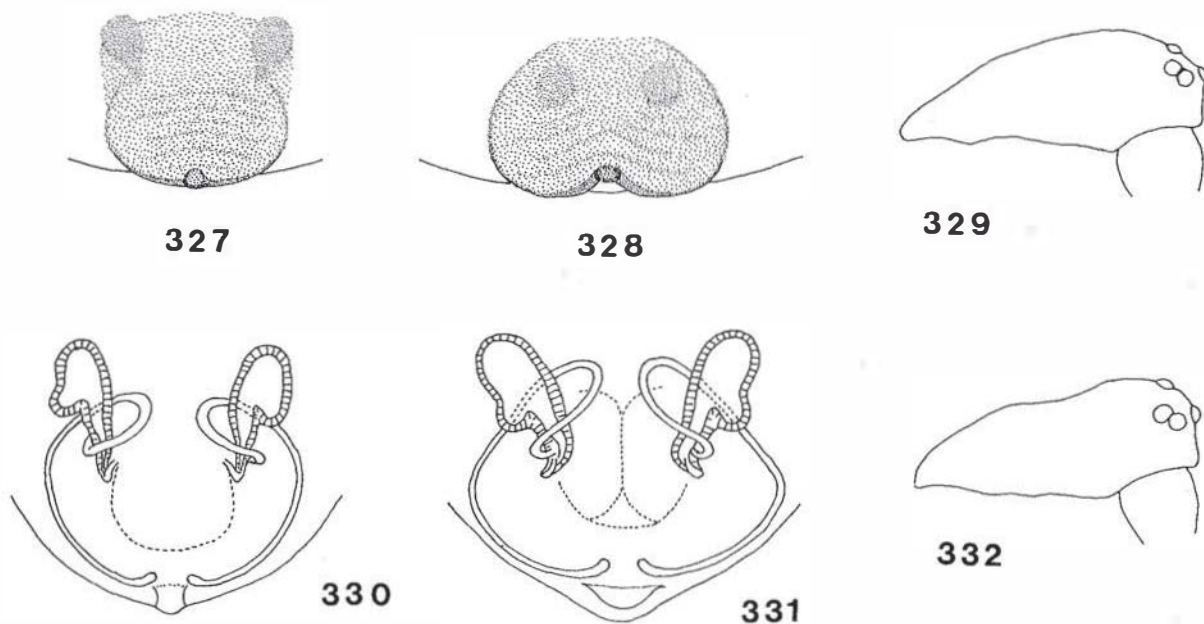
*Type*. Holotype male and "allotype" female from near Nelson; in Otago Museum, Dunedin.

*Records* North Island. North Auckland. Tangihua Range, moss, 16.viii.77, G.Kuschel. Auckland. Rangiriri West, sweeping rye-clover pasture, 23.i.76, R.L.Hill. Hill Cemetery, Whakatane, pitfall, 2-6.x.69 C.L.W. Taranaki. Dawson Falls, Mount Egmont, moss, 15.vi.65, J.I.Townsend. Hawkes Bay, Napier Airport, in rye-clover pasture, 20.iv.65, M.Luxton. Wairarapa. Masterton, 8.vii.68, Newman. Pitfall, 1-8.x.69, C.L.W. Bankview Station, Te Wharau, pitfall, 5-13.ix.70, C.L.W. Hunua, pitfall, 1-8.x.69, C.L.W. Wellington. Otaki,





Figs. 316-317, 320-321, 324 *Erigone prominens* (Bösenberg and Strand) 316 Palp ectal. 317 Palpal tibia dorsal. 320 Palpal patella ventral. 321 Palpal patella ectal another specimen. 324 Male carapace and chelicerae lateral. Figs. 318-319, 322-323, 325-326. *Erigone wiltoni* Locket. 318 Palp ectal. 319 Palpal tibia dorsal. 322 Palpal patella ectal long form. 323 Palpal patella ectal very short form. 325 Male carapace and chelicera lateral. 326 Male carapace and chelicerae (another specimen).



Figs. 327, 329-330 *Erigone wiltoni* Locket. 327 Epigynum. 329 Female carapace lateral. 330 Internal genitalia. Figs. 328, 331-332 *Erigone prominens* (Bösenberg and Strand). 328 Epigynum. 331 Internal genitalia. 332 Female carapace lateral.

pitfall, 1-8.x.69, C.L.W. South Island. Marlborough. Mount Altmarlock, 1500m, Black Birch Range, moss, 17.ii.70, G.Kuschel. St. Rowans Well, Wairua Range, 2400 ft., moss in pasture, 5.ix.66 J.I.Townsend. Nelson. Pretty Bridge, pitfall in pasture, 15.xii.65, G.Hutchings. Lee Valley, moss, 8.ii.65, J.I.Townsend. Korere, 12.ii.69, C.L.W. Parkes Farm, Motupiko, pitfall, 12.ii.69, C.L.W. Mangles River, Murchison, 12.ii.69, C.L.W. Lake Rotoiti, moss 8.ii.65, J.I.Townsend. Mount Arthur Track, 4000 ft., 22.i.48, R.R.F. Otago. Hyde Rock, Old Man Range, 1525m, litter, 15.iii.75, J.C.Watt. North end Pisa Range, 1524m, 24.xi.74, J.C.Watt. Old Man Range, 5,500 ft., 23.i.62, R.R.F. Leith Saddle 30.ii.76, R.R.F. Outram-Hindon Road, pitfall, 1-13.xii.69, C.L.W. Taieri Bridge, Maniototo pitfall, 6.xi.67, C.L.W. Waitahuna Bridge, Lawrence, pitfall, 2.i.70, C.L.W. Conical Hill, pitfall, 23.xi-7.xii.69, C.L.W. Irritate Bridge, pitfall, 6-20.xii.69, C.L.W. Millers Flat, 500m, pitfall in tussock, x.8, B.Barratt. Allans Beach, pitfall in salt meadow, 23.vii-6.viii.53, B.J.Marples. Fiordland. Eglinton Valley, beech litter, 30.x.66, J.I.Townsend. Lake McKerrow, litter 18.i.50, J.Kikkawa. Westland. Taunaka, Open Island, pitfall in grassland, 3.i.71, M.F.Miller. Franz Josef, 25.vi.71, J.Dumbleton. Snares Island. Penguin Rookery, on foliage, 23.ii.72, C.J.Horning. Sinkhole Flat, 11.iii.71, D.S.Horning. Antipodes Island. Mount Galloway, 380m, 23.ii.69, G.Kuschel. Central Valley 300m litter, 25.ii.69, G.Kuschel. Reef Point, moss, lichens and litter, 1.ii.69, G.Kuschel. Auckland Island. Enderby Island, sward, 25.ii.73, J.S.Dugdale.

#### *Erigone prominens* Bösenberg and Strand

Figs. 305, 316, 317, 320, 321, 324, 328, 331, 332

*Erigone prominens* Bösenberg and Strand 1906: Abh.Senck.naturf. Ges. 30:168; OI I: J.Inst.Polytech.Osaka Cy.Univ.Ser.D/I:80; Locket 1973: Bull.Br.arachnol.Soc. 2(8): 1180

**Measurements** Carapace length: female 0.65-0.85 mm, male 0.65-0.80 mm Total length: female 1.45-1.80 mm, 1.45-1.60 mm

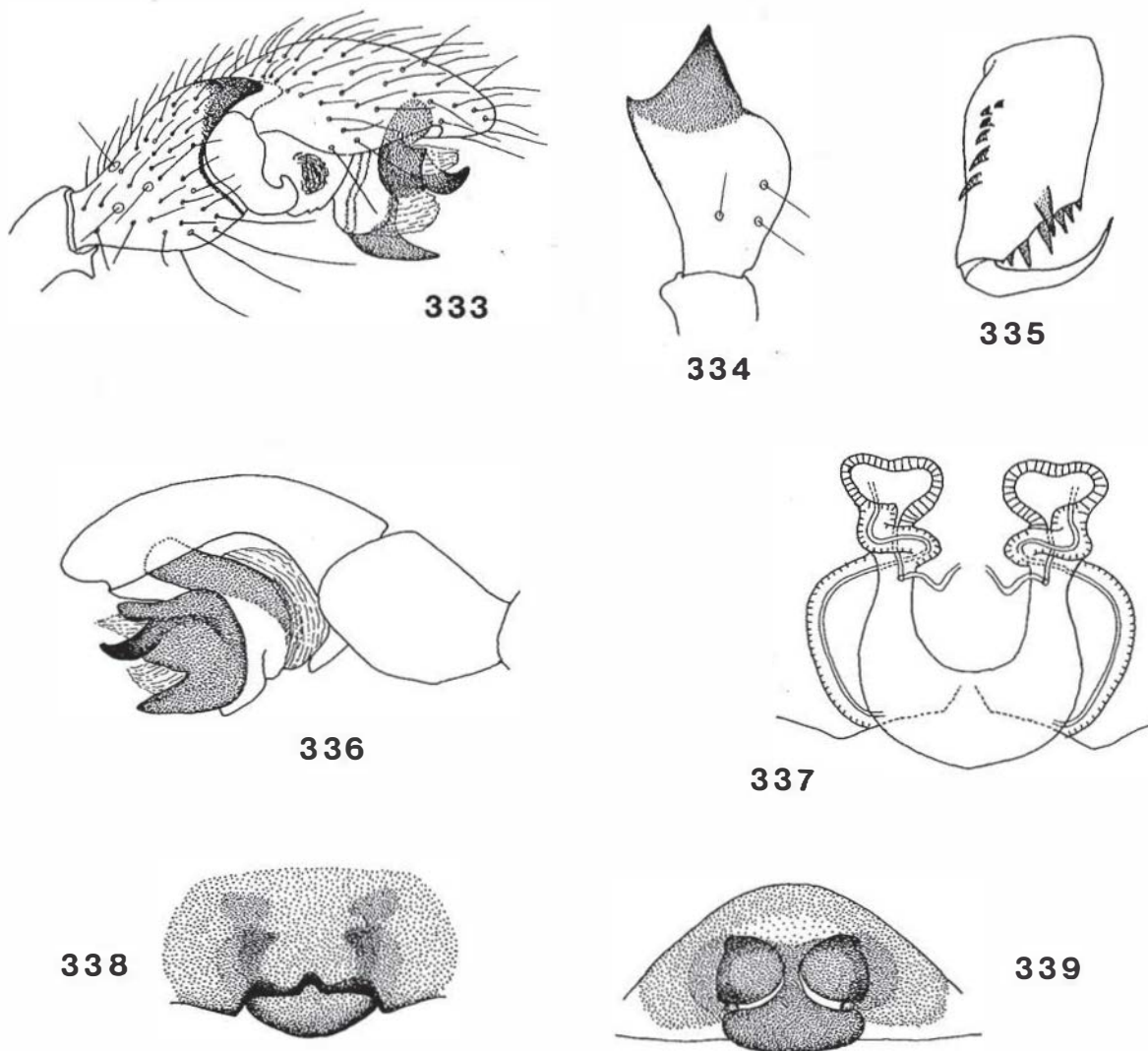
**Description** Carapace brown to chestnut brown, with dusky

markings and margins. Carapace profiles Figs. 305, 324, 332. Chelicerae: the male chelicerae have a row of 6 (or occasionally 7) curved pointed teeth on the anterio-lateral face (Figs. 305, 324); the female chelicerae occasionally also have a row of small denticles anteriorly. Abdomen grey to black. Sternum: brown, heavily suffused with black. Legs: yellow to orange-brown. The femora and metatarsi are spineless. The tibial spines are 2221 in the female in the male, the spines are absent, or present only on tibia IV. Metatarsi 1-III have a trichobothrium, with Tml 0.45-0.50 in the female, ea. 0.40 in the male. Epigynum; Figs. 328, 331. Palp Figs. 316, 317, 320; there are denticles on the femora and on the mandibles, and the patellar apophysis is curved inwards. Occasional specimens have the femur and patella lengthened (Fig. 321), but the variability in this respect in *E.prominens* is less than in *E.wiltoni*.

The female can be diagnosed by the epigynum and the carapace profile (see *E.wiltoni*). The male can be diagnosed by the palp and the carapace profile (see *E.wiltoni*).

**Type.** From Japan; locality of type unknown.

**Records** Three Kings Islands. Castaway Camp, litter, 29.xi.70, G.W.Ramsay. Auckland. North Auckland. Kohukohu, from mangroves, 27.viii.53, B.J. Marples. Near Te Pahi, from manuka, 30.xi.60, B.A.Holloway. Auckland. Remuera, in building, ix.45, S.A.Rumsey. Woodhill, sweeping maize, 19.i.76, R.L.Hill. Pasture, 18.ii.71, C.Butcher. Rangiriri, sweeping rye-clover pasture, 23.ii.76, R.L.Hill. Waikawau, beach, 24.iii.77, D.W.Helmore. Waihirere Domain, Gisborne, litter, 26.x.76, N.Katipa. Lake House, Waikaremoana, from foliage, 18.xii.46, R.R.F. Mount Ngamoko, 2000ft., on ferns, 9.xii.46, R.R.F. Hawkes Bay. Clifton on foliage, 29.xii.46, R.R.F. Te Awanga beach, 24.xii.46, R.R.F. Manawatu. Vinegar Hill Reserve, 12.xii.46, R.R.F. Wairarapa. Mangarua, x.67, C.L.W. South Island. Marlborough. Mount Altmarlock, 1700 m, Black Birch Range, 12.ii.70, A.C.Eyles. Black Birch Range, 4,500 ft., in swamp, 12.ii.70, A.C.Eyles. Nelson. Parkes Farm, pitfall in pasture, 8.vi.71, N.A.Martin. Mangles River Bridge, Murchison, pitfall, 12.ii.69, C.L.W. Canterbury. Oxford, 1.xii.61, R.E.Leech. Harewood, 30.i.61, R.E.Leech. Otago. Dunedin, iii.58, R.R.F. Auckland Island. Adams Island, 2.i.66 G.Kuschel.



Figs. 333-339 *Eperigone fradeorum* (Berland). 336 Palp ectal. 334 Palpal tibia dorsal. 335 Male Chelicera anterior. 336 Palp mesal. 337 internal genitalia. 338 Epigynum ventral. 339 Epigynum caudal.

### *Eperigone fradeorum* (Berland)

Figs. 302, 303, 333-339

*Anerigone fradeorum* Berland 1932: Ann.Soc.ent.France, 101:76

*Eperigone fradeorum*: Jocqué 1984:J.cnt.Soc.South Africa, 47:124

*Eperigone banksi* Ivie and Barrows 1935: Bull.Univ.Utah Biol. 26(5):8 - New synonym.

**Description** Carapace pale brown to orange, with the fovea marked with a dark line. Chelicerae: the male chelicerae have a row of 5-6 curved, pointed teeth antero-laterally, and a large pointed boss antero-laterally Figs.302, 335; these teeth are relatively larger in large specimens. Abdomen grey, with a few faint darker chevrons dorsally. (Fig. 303).Sternum brown to orange, suffused with grey. Legs, yellow-brown to orange. There are no spines on the femora or metatarsi; the tibial spines arc 2221 in both sexes. Each metatarsus has a trichobothrium, with TmI 0.50-0.53. Epigynum Figs. 337, 338, 339. The region adjacent to the genital openings is often obscured by a dark coloured plug of exudate; this is a common phenomenon in the eperigone species. Palp Figs. 333, 334,

336; there is a tendency to allometric growth, larger specimens having the tibia longer and the patellar apophysis somewhat greater. The New Zealand specimens have the genitalia, in both sexes, identical with those of the Azores and North American specimens.

This species is readily diagnosed, in both sexes, by the genitalia.

**Type:** from the Azores; syntypes from MNHN, Paris, examined.

**Records** North Island. North Auckland. Kunue, sweeping pasture, 19.i.76, R.L.Hill. Auckland. Riverhead, in cow dung, 25.ii.75, W.A.Martin. Mount Albert, 3.ii.49, R.K.Dell. Rangitoto Island, under stone mid littoral zone, 24.iii.74, J.C.Watt. Pukekohe, pitfall in pasture, 14.v-14.vi.77, N.A.Martin. Redhill, pitfall in kikuya pasture, 18.iii.76, C.Butcher. Taranaki. Oakura Beach, 21.ii.69, R.R.F. Hawkes Bay. Clifton, 24.iv.68, R.W.Hutton. Taradale, 1.v.67, R.W.Hutton. Wairarapa. Coastal plains, pitfall, 5-13.ix.70, C.L.W. Mangarei, C.L.W. Mangarici, cow dung, 22.iv.75, B.A.Holloway. South Island. Marlborough. Waima River, 16.iii.69, C.L.W. Nelson. Parkes 88 Valley, 21.v.70, N.A.Martin. Pretty Bridge Valley, pitfall in pasture, 9.xi.66, G.Hutchings. Otago. Aillans Beach. pitfall in salt marsh, 28.v.-11.vi.53, B.J.Marpies.